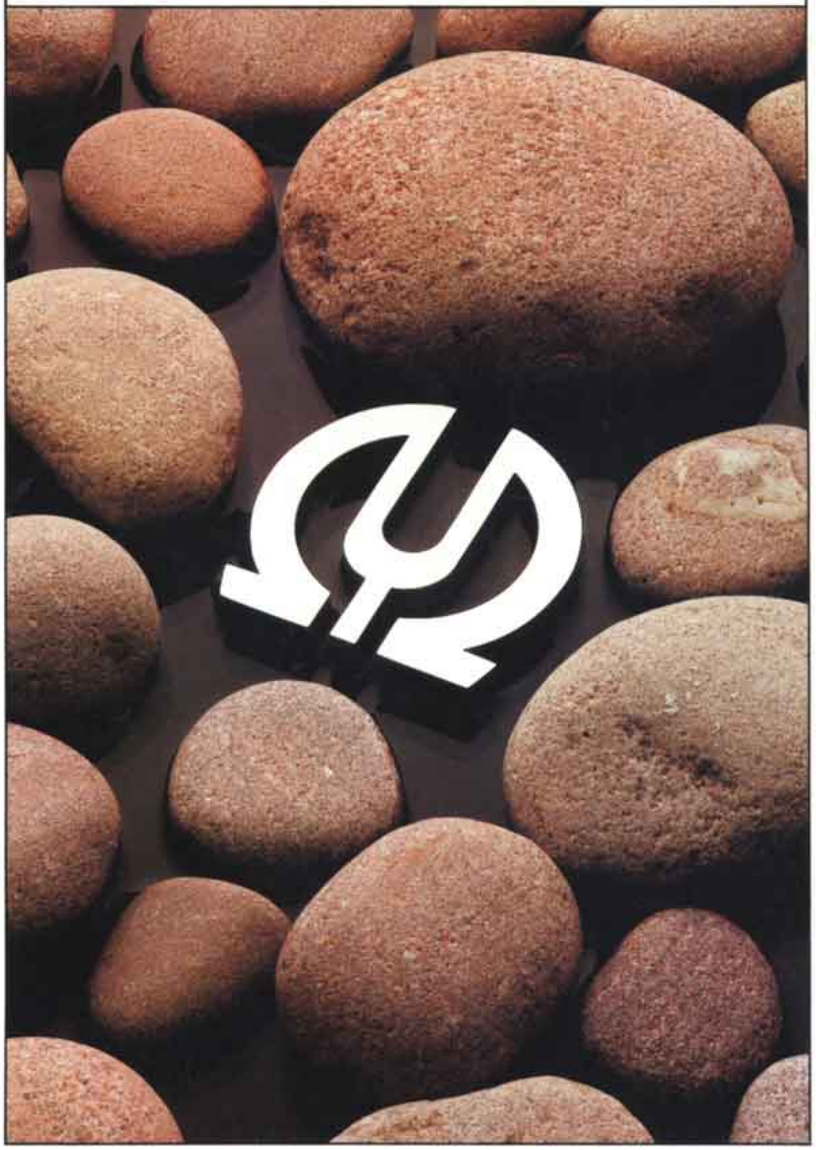
HI-FI-STEREO 1978/79



PIONEER®

If there's a problem with hi-fi today, it's the persistence of "medium-fi". Not everyone can meet the demand for real state-of-the-art sound reproduction and maintain uniform standards of quality under conditions of mass production. The result is sometimes state-of-the-art gadgetry and misleading paper specifications. And these are allowed to exist because many serious enthusiasts of live music are not very demanding about hi-fi. They tend to distinguish only between "live" music and "packaged" music. However, such a distinction overlooks the fact that a lot of fine music today, such as modern electronic music and a good number of historical recordings, could not exist without the high fidelity stereo record.

With 40 years of exclusive commitment to high fidelity and a sizeable investment in audio-frequency electronics research, giving it the leadership position in the field, Pioneer has a very personal stake in encouraging consumer demands for perfection. We want to stress the dividing line between high fidelity and average fidelity, not blur it.

THE PIONEER PYRAMID

For the sole purpose of making quality hi-fi, Pioneer calls upon a whole range of specialists from different fields–a wide base of scientific and technical talent focusing all of its attention on the summit of sound. Our resources not only include a sophisticated Acoustical Engineering Research Laboratory, a chemistry lab, a Semiconductor Engineering Laboratory, a woodwork lab, and a laboratory for testing speaker cone materials, but also a special facility just for developing new production techniques. To complement all this technology, and in recognition of the human ear's supremacy in judging hi-fi performance, we provide a live concert right at the plant at least once a month, for all our technicians and engineers.

IN DEFENSE OF HI-FI

If we've devoted so much to hi-fi, it's because we recognised years ago that hi-fi is a unique gift of science which deserves to be valued in its own right. Real high fidelity like Pioneer's brings you something you wouldn't otherwise have: the world's best musical performances with just the flip of a switch; concerts which you might ordinarily have to travel half-way around the world to hear live.

Moreover, with hi-fi, there's never a false note, and you can compare different interpretations of the same work instantly. You're able to learn very quickly which kind of music is "right" for you; which soprano does better justice to a given operatic role.

Finally, no musical instrument, no matter how "live", can represent the totality of an orchestra. No guitar can play a flute part. But a Pioneer hi-fi system can "play" a piano concerto, a guitar recital or an explosive symphony with impeccable accuracy and a fullness of sound that will leave you breathless . . . if you just give it the opportunity.

Even if your listening room leaves something to be desired, acoustically. Because Pioneer components are made for the home. Pioneer components, particularly a graphic equalizer like the SG-9500, are quite prepared for all the little distortions with which your listening room will greet their extremely linear sound. To compensate for reflecting walls, for windows, curtains and carpets, all you need to do is take control.

HI-FI FOR HI-FI'S SAKE

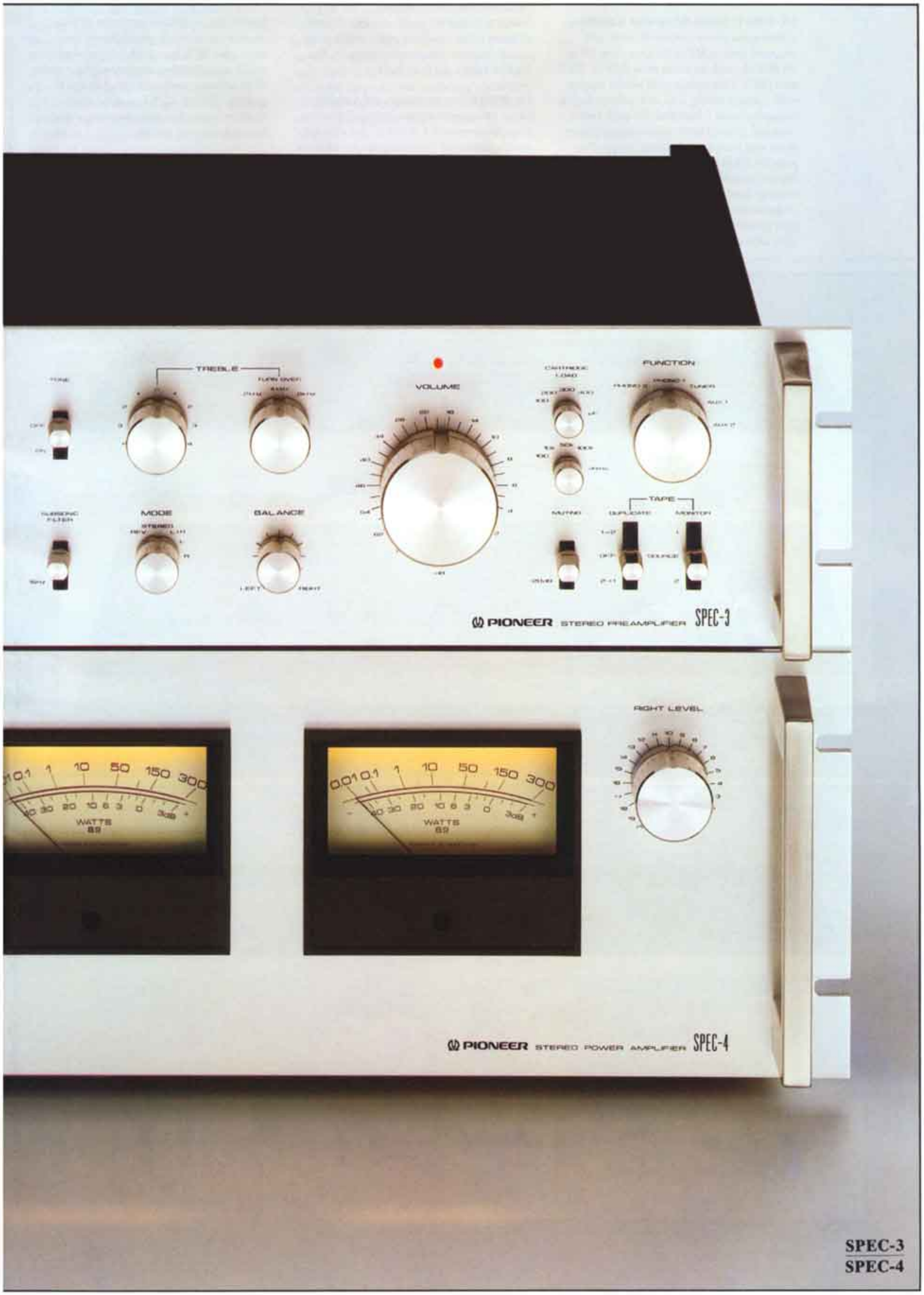
Pioneer Rack JAR-2S *featuring the high-class SPEC-4 split power amplifier, the SPEC-3 preamplifier, the RT-707 open reel tape deck (all designed for rack mounting) and the TX-9500 II tuner and SG-9500 graphic equalizer in special rack adaptor frames (JAR-101).*





SPEC-3 Professional Standard Stereo Preamplifier. *Highly versatile preamp for 2 phono, tuner, 2 AUX, 2 tape monitoring and dubbing plus DIN tape jack. With 3-stage direct-coupled equalizer amplifier in Class-A operation driven by a plus-minus split power supply. Features a subsonic filter, 4-gang 32-step attenuator-type volume control, audio muting, power switch mute, 3-stage Turnover Tone Controls, tone defeat switch, 8 cartridge load settings. Only 0.01 % THD from 20 to 20,000 Hz (2 V output) in phono and 0.005 % THD for tuner, AUX and tape.*

SPEC-4 Professional Standard Stereo Power Amplifier. *Continuous power output 150 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz with no more than 0.01 % THD and IMD. "DC" configuration power amplifier with split power supply incorporating two huge power transformers, two pairs of 22,000 µF electrolytic capacitors, two heat sinks and independent level controls and power meters for each stereo channel. Differential amplifier is current mirror loaded with 3-stage Darlington parallel push-pull direct-coupled OCL. Frequency response: 5 to 100,000 Hz (+0 dB, −1 dB). Damping factor: 100 (8 Ω). Speaker output 8 to 16 Ω.*


TREBLE
VOLUME
FUNCTION
MODE
BALANCE
TAPE
PIONEER STEREO PREAMPLIFIER SPEC-3
RIGHT LEVEL
WATTS
PIONEER STEREO POWER AMPLIFIER SPEC-4

SPEC-3
SPEC-4

SA-9500 II Stereo Integrated Amplifier. *Continuous power output 80 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz with no more than 0.05% THD and IMD. Plus-minus split power supply with 1 transformer, 2 12,000 μF electrolytic capacitors and 1 heat sink for each stereo channel, affords better stereo image placement and increased dynamic range. Outputs for 2 sets of speakers, Pioneer Twin Tone Controls, tone defeat, loudness, audio muting, high and low filters, 4-position cartridge resistance capacitance selectors, 2-tape monitoring and two-way dubbing, plus DIN tape. Advanced electronic protection circuit and separable preamp for substitution of an equalizer or for multi-amp use of preamp. Frequency response: 5 to 50,000 Hz (+0 dB, −1 dB).*

SA-8500 II Stereo Integrated Amplifier. *Same split power design and performance specifications as SA-9500 II, but with 60 watts continuous power output per channel, min. RMS at 8 ohms from 20 to 20,000 Hz. A perfect aesthetic and electronic match for Pioneer's TX-8500 II tuner. Features outputs for 2 sets of speakers, 3-step Turnover Tone Controls, tone defeat, loudness contour, muting, high and low filters, 4-position cartridge selector, reverse stereo mode, connections for 2 tapes plus DIN tape with 2-tape monitoring and 2-way dubbing, and separable preamp. High phono overload level of 250 mV (1 kHz, THD 0.05%). Special electronic speaker protection incorporating a muting circuit for power switch.*

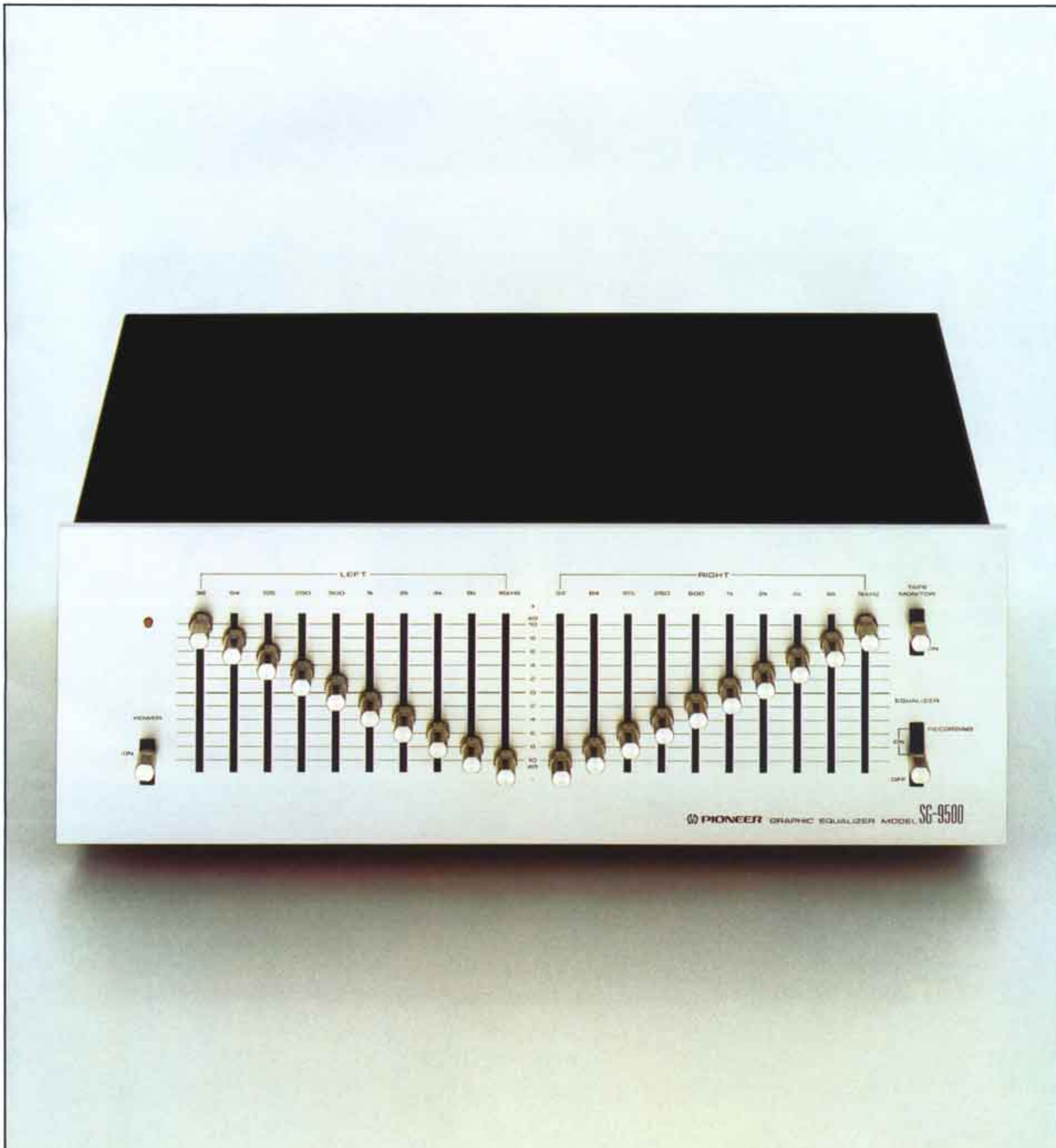


SA-9500 II



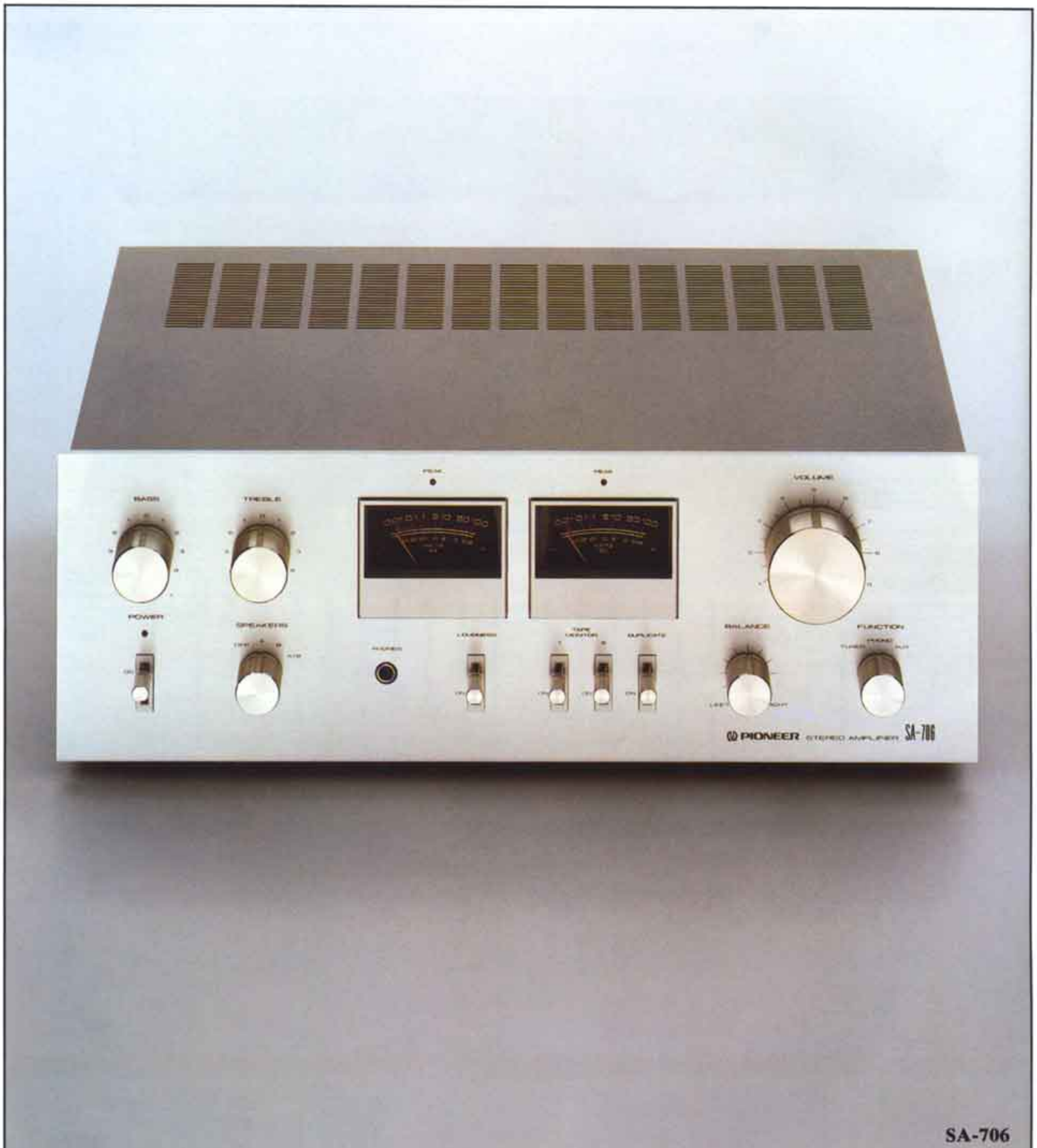
SA-8500 II

SG-9500 Stereo Graphic Equalizer. *For actual "hand tailoring" of hi-fi sound field through precise control (± 10 dB) of ten different frequencies per channel (see specifications). Wide frequency response (5 to 70,000 Hz) permits modulation throughout the musical spectrum to stress a violin . . . or bring out the lead singer. The SG-9500 can improve the performance of any hi-fi system by compensating for "holes" or "bumps" in the frequency response of other components and equalize (that is, "make flat again") a response curve altered by the listening room. And by acting on the 32 Hz slide control, for example, you can significantly reduce turntable rumble. Connected to a professional open-reel tape deck, the equalizer makes possible up to six different recording and playback techniques. Advanced design with 14 ICs replacing conventional coils and capacitors yields S/N ratio of 90 dB (2 V output). A must as a complement to a regular hi-fi system!*



SG-9500

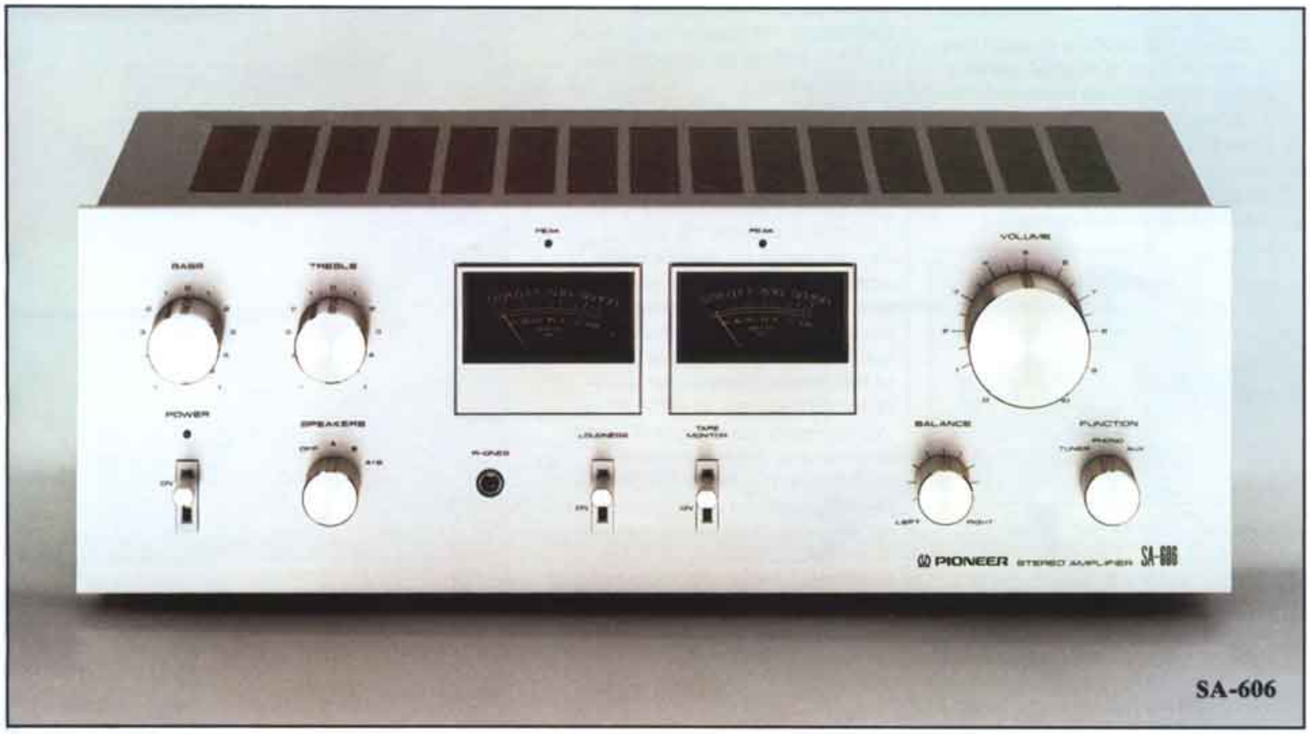
SA-706 Stereo Integrated Amplifier.
Continuous power output 60 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz, with no more than 0.04% THD and IMD. Features outputs for 2 sets of speakers, separate bass and treble tone controls, loudness contour, separate watt meters for each channel, LED peak indicators to warn of speaker overload, electronic protection, 2 AUX inputs, 2-tape monitoring and one-way tape duplicate, plus DIN tape. Frequency response (Phono RIAA Equalization): 20 to 20,000 Hz (± 0.2 dB). Damping factor: 40. Power supply with discrete and separate transformers and two 12,000 µF electrolytic capacitors separately feeds Class-A operation preamp and Class-B operation power amp.



SA-706

SA-606 Stereo Integrated Amplifier. *Continuous power output 40 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz, with no more than 0.05% THD and IMD. Discrete power supply system for Class-A and Class B sections. Current-mirror loaded differential amplifier with constant-current-loaded Darlington connected all-stage direct-coupled OCL output. Features outputs for 2 sets of speakers, click-stop tone controls, loudness contour, separate watt meters with LED peak indicators for each channel, tape monitoring for tape 1 and DIN tape, and advanced electronic protection. Frequency response (phono RIAA Equalization): 20 to 20,000 Hz (± 0.3 dB). Damping factor: 30. Phono overload level: 180 mV (1 kHz, THD 0.05%).*

SA-506 Stereo Integrated Amplifier. *Continuous power output 25 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz, with no more than 0.08% THD and IMD. New IC in phono equalizer section helps achieve RIAA curve deviation of no more than ± 0.5 dB. Features illuminated watt meter, click-stop volume and tone controls, loudness contour and advanced circuitry for low noise.*



SA-606



SA-506

Pioneer had no choice but to make superior tuners. Because less-than-perfect tuner performance would show up immediately when played through Pioneer's impeccable amplifiers. This legendary tuner performance is due in large part to the quality of certain integrated circuits, exclusive to Pioneer, which have been deployed in key stages of all three tuners, even in the AM section.

PIONEER'S EXCLUSIVE INTEGRATED CIRCUITS

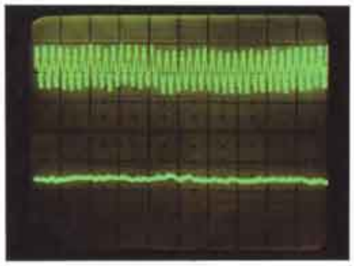
Pioneer has carefully chosen these ICs on the basis of original research carried out at its own Semiconductor Engineering Laboratory. Among these exclusive ICs, two deserve special mention here for their role in filtering out noise while preserving a maximum of musical content.



Newly developed Pioneer exclusive ICs.

The PA-1001 IC used in the PLL MPX (stereo demodulator) section automatically cancels the 19 kHz pilot signal from the station and eliminates the need for the traditional low-pass filter that inevitably impinges on high frequency musical content in more traditional tuners.

The PA-1002 IC in the FM de-emphasis section includes an electronic switching circuit that lowers the cut-off point of the high-pass (low-cut) filter in the muting circuit from 10 Hz to 8 Hz to preserve low frequency content.


Oscillograph of Pilot Signal Leakage from tuner output terminal.

YOUR CHOICE: WIDE OR NARROW

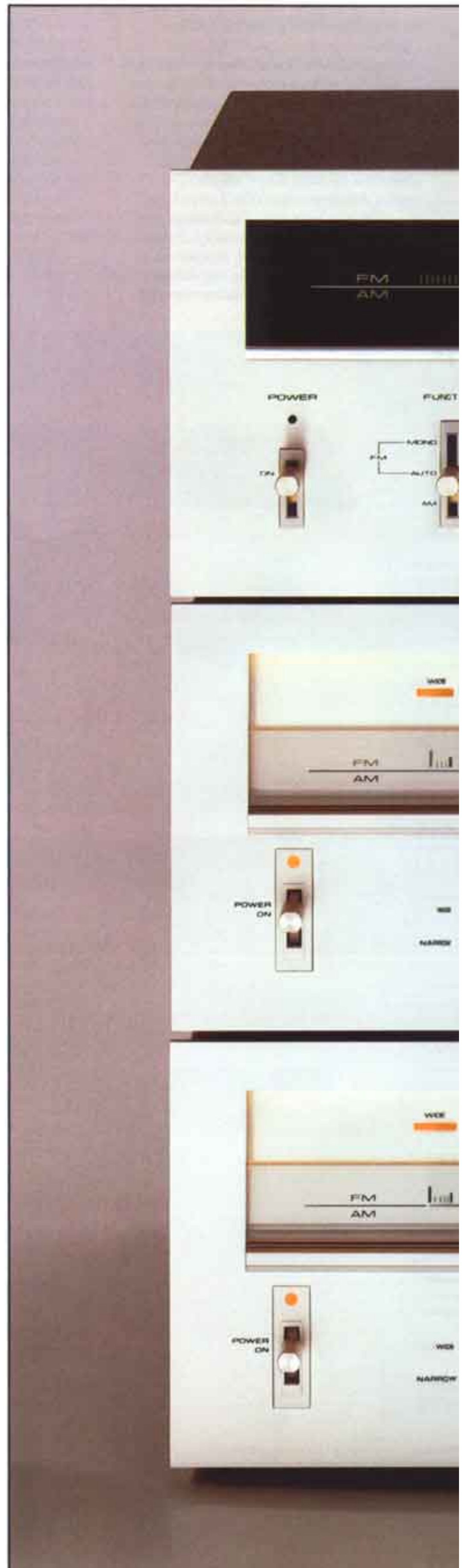
A special Pioneer feature in the TX-8500 II and the TX-9500 II lets you choose the bandwidth that is most appropriate for any given station. There is no compromise imposed upon you. When the station you're listening to happens to be free of interference from adjacent stations, the tuner can be set to WIDE. An extremely linear super-wide discriminator with a bandwidth of ±6 MHz picks up all the harmonics in the sidebands and delivers a superior tonal quality. If there's a problem with adjacent stations, the NARROW band setting will bring into play an array of double-pole ceramic filters (built right into the PA-3001 IC) for improved selectivity. The choice is yours.

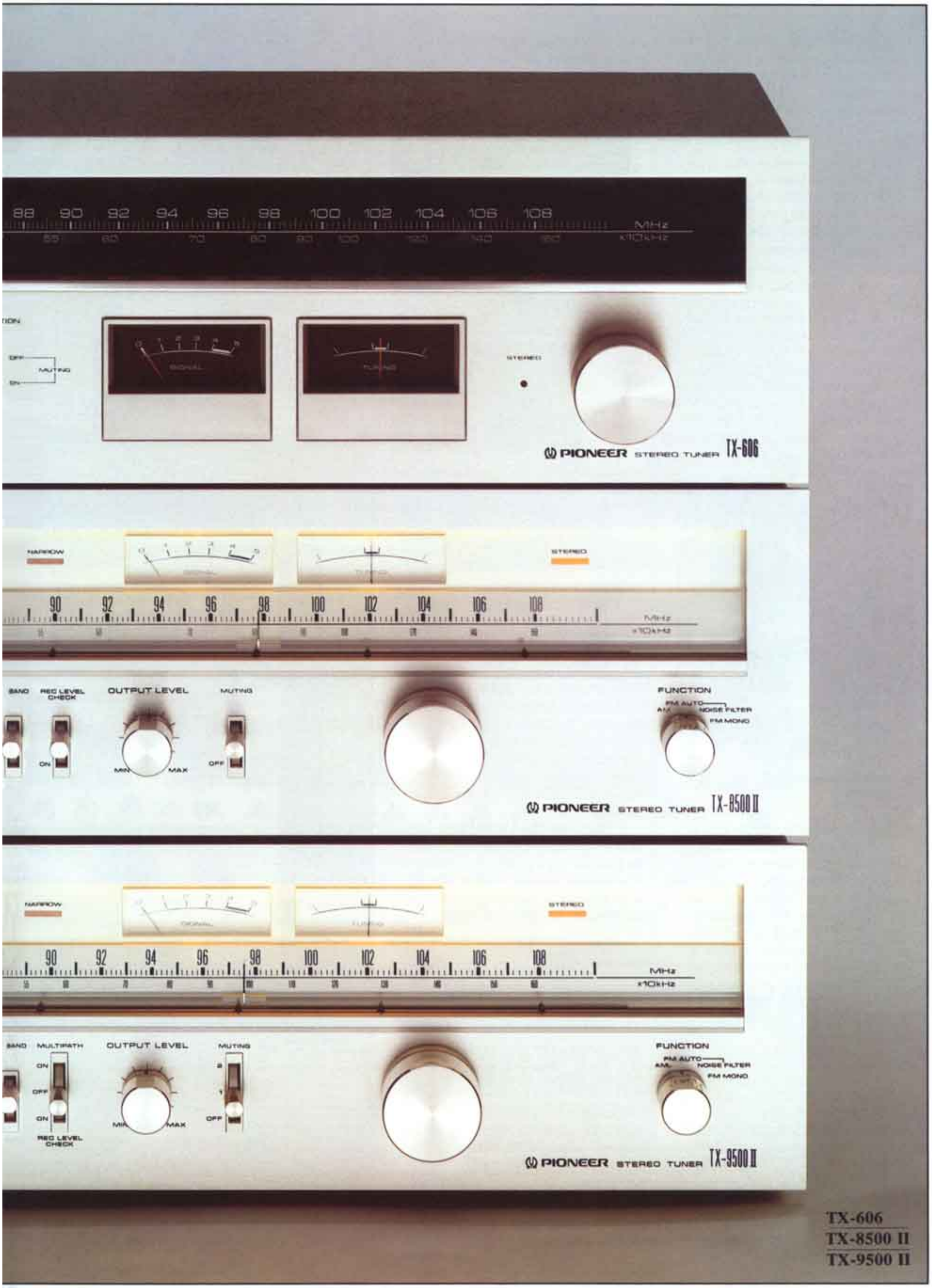
TUNERS

TX-606 AM/FM-Stereo Tuner. *With automatic PS canceller, extra wide tuning dial, LED power and stereo indicators, dual tuning meters, FM muting, and FM de-emphasis for Dolby broadcasts. Well designed circuitry and Pioneer special ICs for FM and AM assure clean performance. 50 dB quieting sensitivity: 16.1 dBf (mono), 38.0 dBf (stereo). DIN sensitivity: 25 μV (stereo). Selectivity: 60 dB. Stereo separation: 40 dB. S/N ratio: 79 dB (mono), 74 dB (stereo).*

TX-8500 II AM/FM-Stereo Tuner. *With automatic PS canceller, WIDE/NARROW selector and indicator lights, recording level check, dual meters, station markers, FM muting, fixed and variable output and protection cicuit. 4-gang variable capacitor and double-balanced PLL MPX. 50 dB quieting sensitivity in stereo: 37.2 dBf (40 μV). Selectivity in NARROW: 80 dB. S/N ratio: 79 dB (mono), 75 dB (stereo).*

TX-9500 II AM/FM-Stereo Tuner. *With automatic pilot signal canceller, WIDE/NARROW IF band selector and indicator lights, multipath switch, recording level check, dual tuning meters, sliding station markers, 2-step FM muting, fixed and variable output and terminal for oscilloscope. Five new Pioneer exclusive ICs improve tonal quality and sensitivity and lower distortion. 50 dB quieting sensitivity in stereo: 36.1 dBf (35 μV). Selectivity : 85 dB (NARROW). Stereo separation (1 kHz): 50 dB (WIDE). S/N ratio (65 dBf): 82 dB (mono), 77 dB (stereo).*



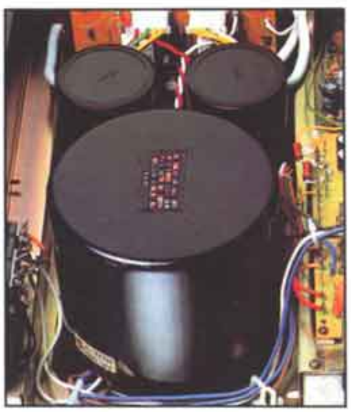


TX-606
TX-8500 II
TX-9500 II

The Pioneer receiver has long been a symbol of high fidelity excellence, both for its abundant power and its low distortion. Yet Pioneer went back to the drawing board this year to eliminate an imperfection newly discovered by sound specialists in nearly every receiver on the market–transient intermodulation distortion (TIM), which occurs when sharp, powerful transient notes come through out of phase and intermodulate other frequencies.

KILLING TIM

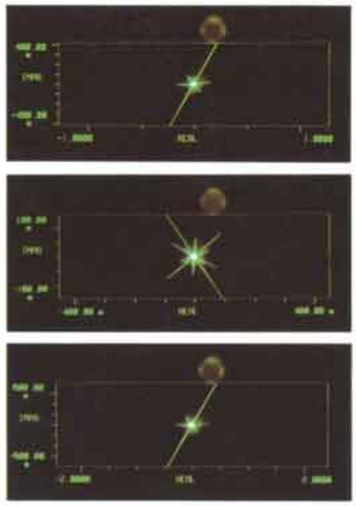
Yes, TIM does exist, especially in quality receivers with otherwise low distortion figures brought about by negative feedback. Only, we're proud to say you won't hear it in Pioneer's new SX series. We found that TIM results mostly from phase shifts caused by capacitors in the feedback loop. Naturally, we removed the



Huge toroidal core transformer of SX-1080.

capacitors and achieved the kind of transient response we have today, without harming our remarkable THD and IMD figures.

Having killed the dragon of TIM, we continued our development of super powerful DC-powered receivers. The most illustrious of these is the SX-1980, which has a huge toroidal-core transformer, with separate windings for the left and right channels, giving it 270 watts per channel with outstanding stereo separation, not to mention the other "illustrious" features like Quartz-lock for the tuner section.



Comparison of AC and DC amps showing no phase shift or TIM in Pioneer DC receivers.

(Nyquist's Chart showing–from top to bottom–Source, AC Power Amplifier, DC Power Amplifier.)

UNIQUE PIONEER TUNER FEATURES

Buying a Pioneer receiver is like buying all the unique features of Pioneer's fine tuners, including the exclusive PA series of integrated circuits, plus the Class-A equalizer circuitry and versatile tone controls of Pioneer's preamps and the DC-configuration power stages of Pioneer's separate amplifiers–all in one package!

If this seems like a rather large one-shot investment, consider that it can be your last for a good many years. The Pioneer receiver is so far ahead of its time technologically, it can wait for separate designs to catch up.

RECEIVERS

SX-1980 AM/FM-Stereo Receiver. *With unique quartz-lock on station frequency–immune to time and temperature drift–better than AFC! Continuous power output 270 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz with no more than 0.03% THD and IMD. Frequency response: 5 to 80,000 Hz (+0 dB, −1 dB). S/N ratio: 120 dB. Has outputs for 3 sets of speakers, 3 cartridge impedance and 4 capacitance settings for phono 1, 2 tape inputs/outputs with tape duplicate, plus DIN tape, 12 dB/octave high and low filters, FM and audio muting, exclusive Pioneer Twin Tone Controls with tone defeat switch and many more outstanding features.*

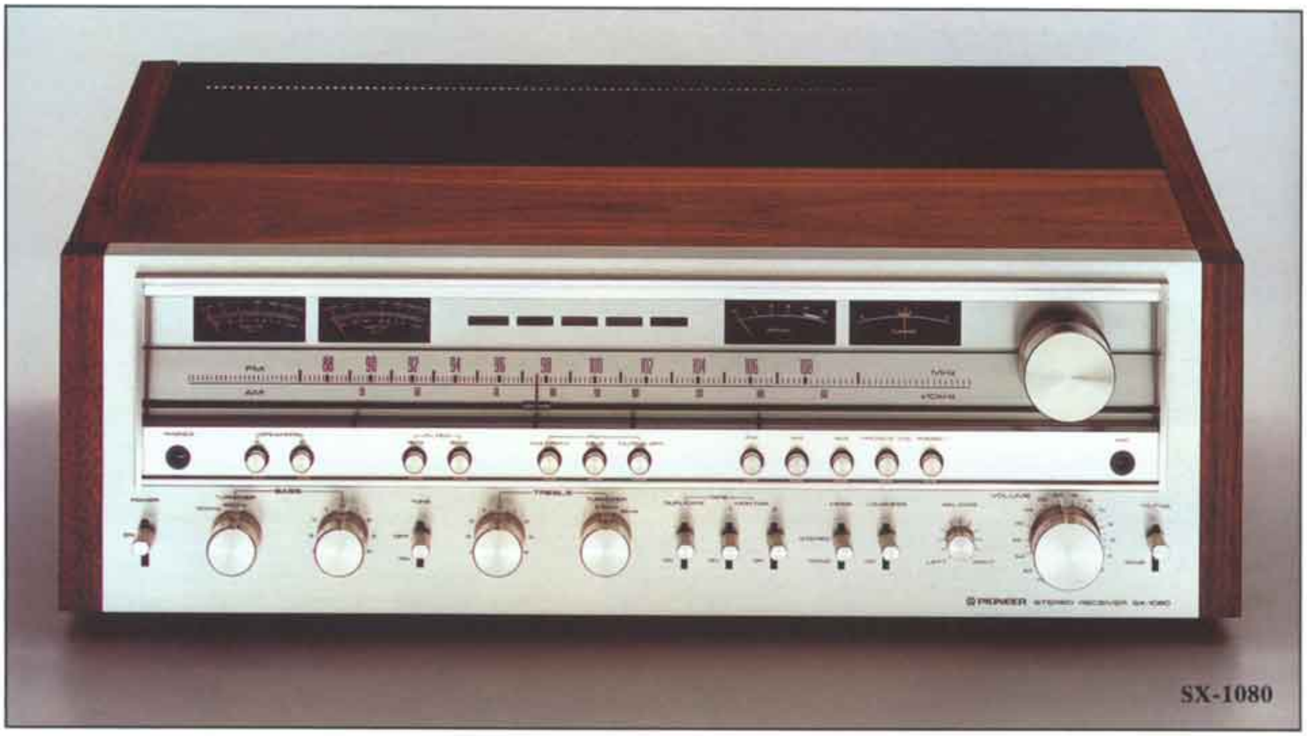




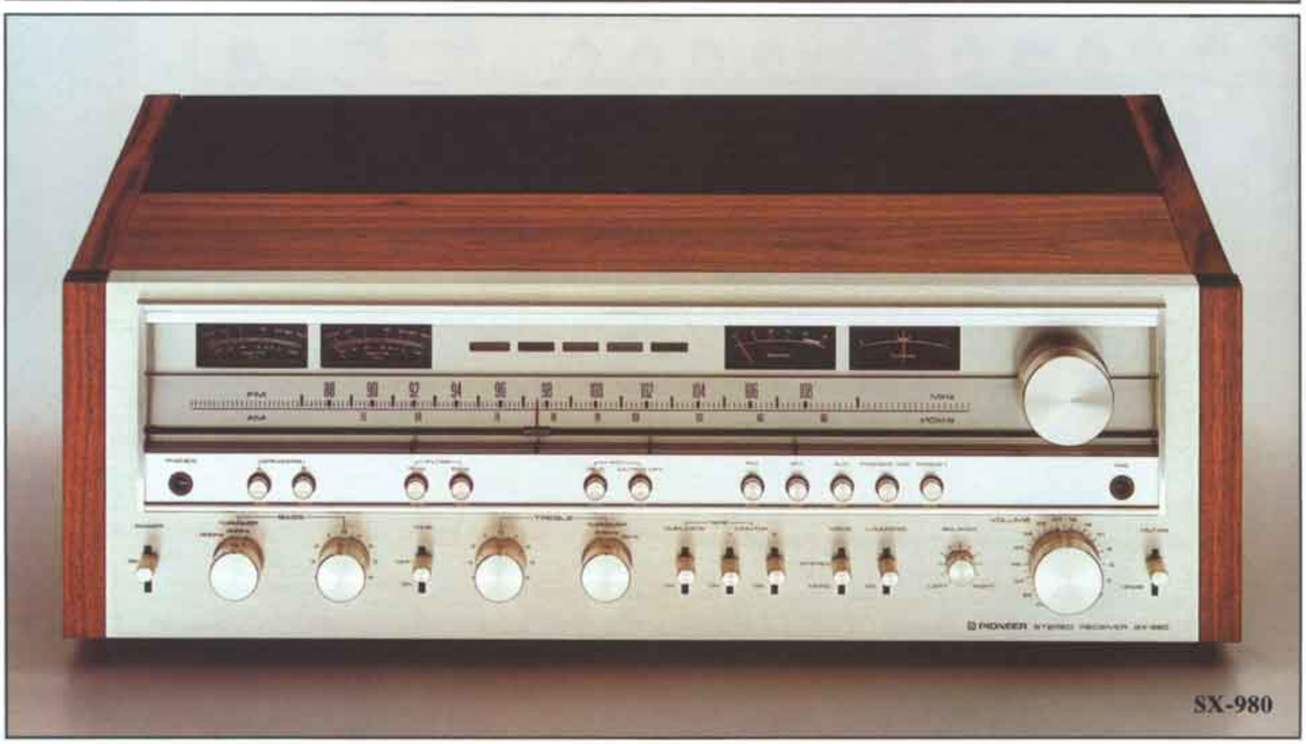
SX-1980

SX-1080 AM/FM-Stereo Receiver. *With direct-coupled DC power amp. Continuous power output 120 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz with no more than 0.05 % THD and IMD. Frequency response: 5 to 80,000 Hz (+0 dB, −1 dB). 100 dB hum and noise. With outputs for 2 speaker pairs, Turnover Tone Controls, 6 dB/octave high and low filters and FM stereo 50 dB quieting sensitivity of 37 dBf (39 µV), and FM stereo separation of 50 dB (1 kHz). Two large watt meters help you feed the speakers exactly the amount of power they need for optimal performance. Current mirror loaded Class-A SEPP in phono equalizer with one-stage differential amplifier and new voltage-proof IC equivalent to 15 discrete transistors.*

SX-980 AM/FM-Stereo Receiver. *With constant current loaded 2-stage differential amp and direct-coupled 2-stage Darlington single push-pull DC configuration power amp. Continuous power output 80 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz with no more than 0.05 % THD and IMD. Frequency response: 5 to 80,000 Hz (+0 dB, −1 dB). Hum and noise: 100 dB. Phono overload: 200 mV. Pioneer Turnover Tone Controls, 6 dB/octave high and low filters. Outputs for two pairs of speakers. FM stereo separation: 50 dB.*



SX-1080



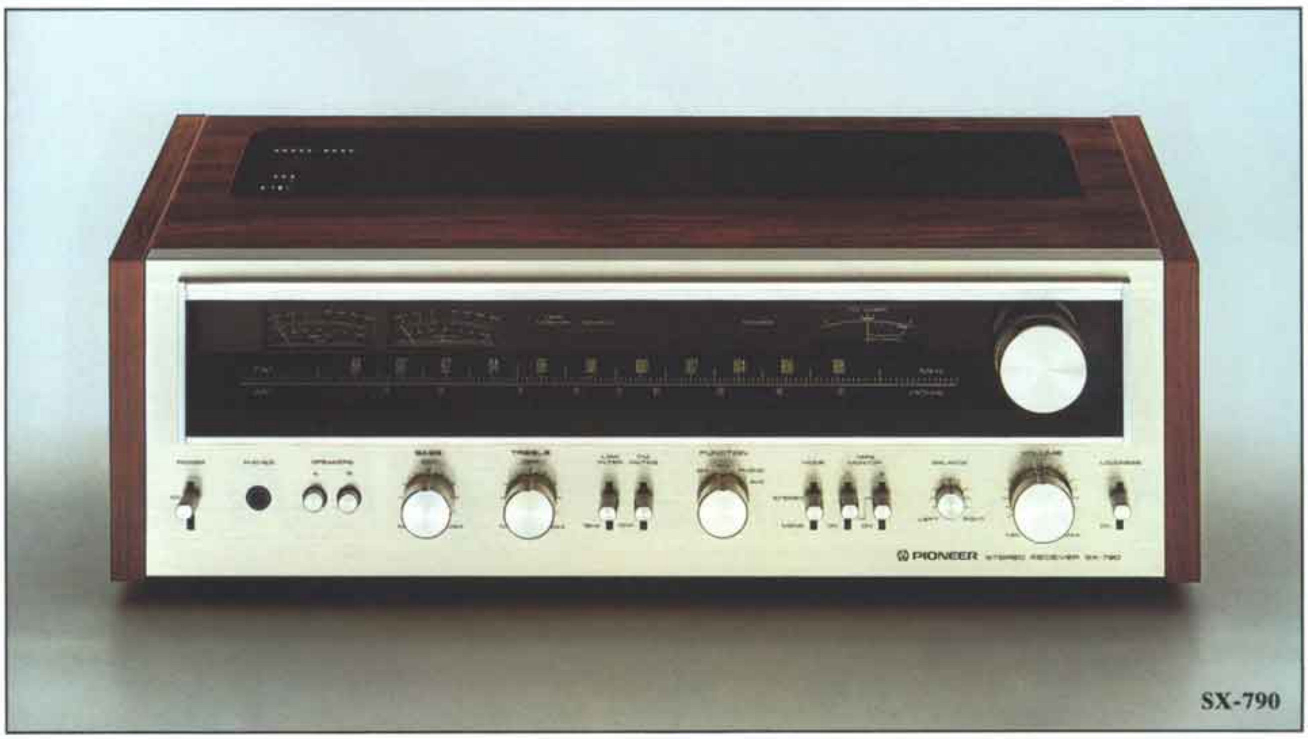
SX-980

SX-890 AM/FM-Stereo Receiver. *With direct-coupled DC power amp. Continuous power output 60 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz with no more than 0.05% THD and IMD. Features PLL stereo FM MPX with automatic pilot signal canceller, tape duplicate/monitor convenience, loudness contour and low-noise CR-type tone control network with "off" position for ruler flat response, plus CR-type subsonic filter. Powers two pairs of speakers. FM 50 dB quieting sensitivity: 37.0 dBf (39 μV). FM signal-to-noise ratio: 72 dB (at 65 dBf).*

SX-790 AM/FM-Stereo Receiver. *With direct-coupled DC power amp. Continuous power output 45 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz with no more than 0.05% THD and IMD. Preamp circuitry is Class-A like top of the line receivers and tuner section is packed with same Pioneer exclusive ICs. Tone control network of CR-type with center flat position circuited after the control amp itself. Pushbutton speaker switches. Meters for station centering and signal strength.*



SX-890



SX-790

SX-690 AM/FM-Stereo Receiver. *With 2 hybrid ICs power amp output containing bias, driver and output stages in quasi-complementary circuits. Output is direct-coupled OCL following first stage differential amp. Continuous power output 30 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz with no more than 0.1% THD and IMD. Features Pioneer exclusive PLL MPX IC incorporating automatic pilot signal canceller. Tone control network is CR-type with a negative feedback loop circuited in power output amplifier itself. Frequency response in AUX: 10 to 60,000 Hz (+0.5 dB, −1.5 dB). FM stereo separation: 40 dB at 10 kHz.*

SX-590 AM/FM-Stereo Receiver. *With power output using hybrid ICs, Pioneer exclusive tuner ICs and dual-gate MOS-FET FM front end. Continuous power output 20 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz with no more than 0.3% THD and IMD. Function switch is backed by muting circuit as in more expensive Pioneer models, to eliminate power on/off and switching noise. Features direct readout watt meters, tuning meter, and PLL MPX with automatic pilot signal canceller.*



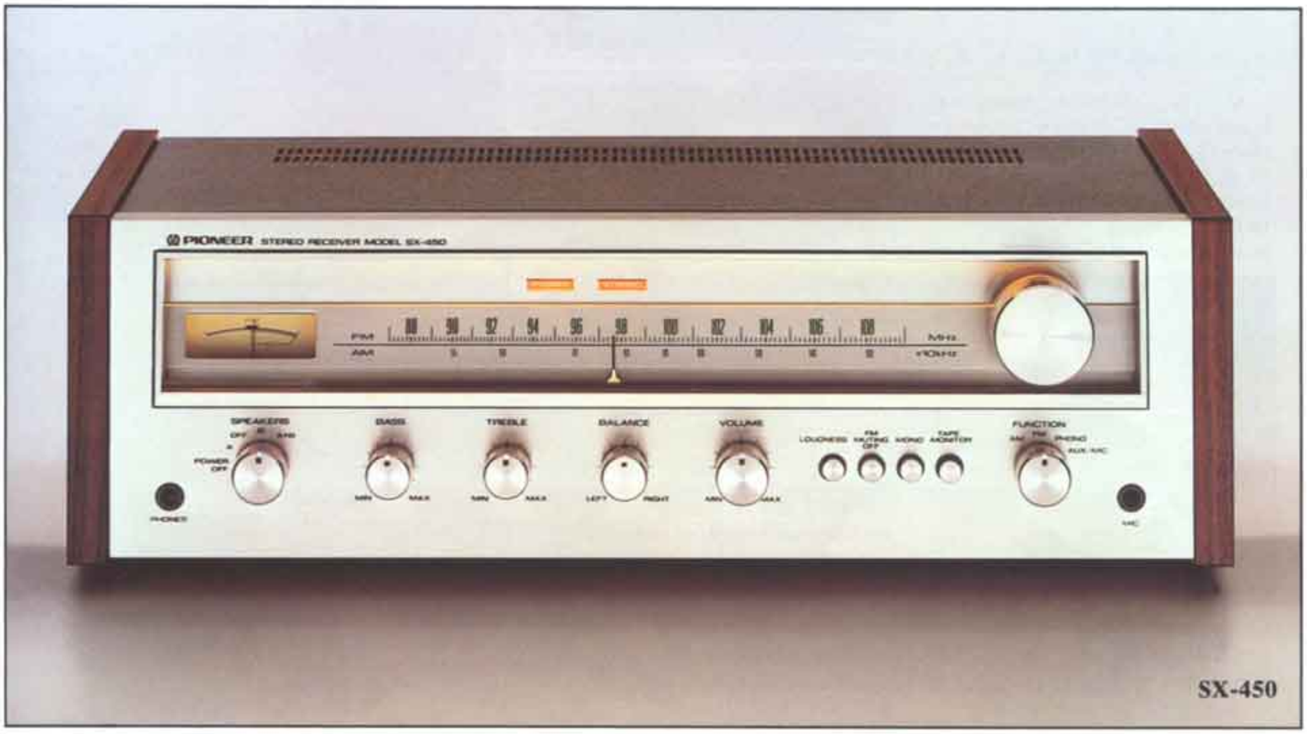
SX-690



SX-590

SX-450 AM/FM-Stereo Receiver. *Employing a direct-coupled OCL circuit in power amp with a first-stage differential amplifier. Continuous power output 15 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz with no more than 0.5 % THD and IMD. High FM sensitivity (39.2 dBf in stereo) is ensured by a low noise FET in front end with a frequency-linear 3-gang variable capacitor.*

LX-690 LW/MW/FM-Stereo 3-Band Receiver. *Continuous power output 30 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz with no more than 0.1 % THD and IMD. Same MPX IC with pilot signal canceller, same tone control and NFB circuitry as SX-690. High gain, low noise FM front end achieves high sensitivity (1.9 μV) thanks to combination of 3-gang variable capacitor and dual-gate MOS-FET.*



SX-450



LX-690

Having perfected the belt-drive turntable to the limit, Pioneer now presents a new generation of direct-drives to satisfy the most demanding of audiophiles. Unlike some other brands which offer nothing more than a new drive system, however, these models from Pioneer take into account all the parts–the tone arm, the head shell and cartridge, and the cabinet–as well as the motor to achieve a level of performance that is unlikely to be surpassed for a good many years.

THE BRUSHLESS HALL MOTOR

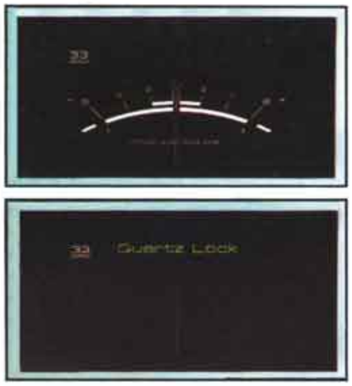
At the heart of Pioneer direct-drive is a brushless DC motor with one or more Hall elements (up to 3 in the PL-C 590). The resistance of a Hall semiconductor varies with the magnetic field impinging on it, making it possible to detect small speed changes



High torque motor of PL-C 590.

as the magnetic poles on the motor rotor pass by. Moreover, the Hall motor converts almost all of the energy it receives into torque output so that less energy turns into heat or vibrations. And since the brushes used to change the polarity of a DC motor tend to generate noise, Pioneer has replaced them with transistors.

Finally there's such a gain in stability that even the motor of a lower priced turntable like the PL-518 is effective up to a load of about 500 g/cm before declining in torque. Which is more than you'll ever need as long as you don't try to play a record with a knitting needle!



Electronic readout display of PL-C 590 and PL-630.

QUARTZ

What's more, the top end Pioneers achieve the ultimate in speed accuracy thanks to state-of-the-art quartz technology, combined with a PLL circuit which compares the frequency of the signal generated by the motor rotor with that of the quartz crystal's reference signal. Of course the incomparable regularity of quartz pulses remains unchallenged. In our turntables, an oscillator signal of 3.072 MHz is divided by a special IC to obtain 6 kHz of constant timing. Then another divider circuit cuts this base frequency by 20 to obtain 300 Hz (45 rpm) or by 27 to obtain 222 Hz ($33^{1}/_{3}$ rpm), causing the motor to turn at exactly the speed you select. Exactly, and practically forever.

TURNTABLES

PL-C 590 Quartz-PLL Direct-Drive Manual Turntable. *The predominantly electronic design has high quality bi-polar ICs in the drive circuits and MOS-type ICs in the control section. The result is wow and flutter maintained at ± 0.035 % (DIN), perfectly accurate speed control (and therefore pitch control) of within ± 6 %, load fluctuation of 0 % within 120 grams of stylus pressure, time and temperature drift, as well as rotation deviation, in the multiple zero range, and rumble of 75 dB (DIN B). Since the PL-C 590 is considered by many people to be the best turntable around today, we suggest you equip it with the SME Series III tone arm or Pioneer's own PA-5000 tone arm (shown here), for which we have provided mounting panels.*





PL-C 590

PL-630 Quartz-PLL Direct-Drive Automatic Turntable. *Luxurious is the only word that suits this all-electronic automatic turntable from Pioneer. Touch-sensitive controls have been placed in line with LED displays and speed meter on the front panel for easy programming of all automatic functions, even when dust cover is closed. Three Pioneer-exclusive ICs are employed in the control section: one complex logic-type working with the Quartz-PLL, one which detects end of play and handles output, and one for Quick-Stop control. There's a very efficient Hall brushless DC servomotor with 6 poles and 9 slots for platter drive and an additional DC motor for the automatic functions. Unmatched stability is provided by diecast aluminum tone arm base and heavy platter (with 340 kg/cm moment of inertia) and diecast magnesium headshell. Features ± 6% pitch control with meter display, electronic cueing, optical/electronic end-of-play detection, anti-skating, and refined anti-howling design with special acrylic butadene styrol resin cabinet and aluminum top-plate. The specs prove the value of all these luxuries: only ± 0.035% (DIN) wow and flutter; 75 dB (DIN B) rumble.*



PL-630

PL-560 Quartz-PLL Direct-Drive Automatic Turntable. *With same drive and metered speed control system as PL-630. Hall DC drive motor is supplemented with an independent second motor (Warren motor) which handles automatic functions of lead-in, play, return, repeat and shutoff. Manual oil damped cueing device, plus record size selector and selector for automatic or manual cueing. Strobe light and meter display aid in fine speed adjustment of ±6%. Permits use of cartridges from 4 to 10 grams with only ±0.035% (DIN) wow and flutter. Rumble: more than 73 dB (DIN B). Low-howl performance guaranteed by solid particle board base, "big feet" insulators, and special rubber decoupler for S-shaped pipe arm and counterweight.*



PL-560

PL-540 Quartz-PLL Direct-Drive Auto-Return Turntable. *With brushless DC servomotor using Hall elements arranged on a base of 4 mm thick diecast aluminum. The newly developed auto-return mechanism itself has been tested for 100,000 continuous operations. Motor is bi-directional, with 3 high density integrated circuits in Sample Hold Speed Detection system based on interaction between quartz oscillator and Frequency Generator. Extremely high start-up torque (1 kg/cm) of this motor permits use of high inertia super heavy platter, resulting in less resonance and other irregularities, while still reaching rated speed in less than half a rotation. Strobe receives its tuning pulses from quartz oscillator rather than AC line, so only one row of calibration dots is required on platter edge. And 40 mm thick solid particle board cabinet, steel bottom plate and extra hard diecast aluminum arm base prevent howling. Result is same wow and flutter and rumble specs as PL-560.*



PL-540

PL-518 DC Servo Direct-Drive Auto-Return Turntable. *Same skillfully designed and carved anti-howl cabinet and diecast aluminum arm base as PL-540, plus newly designed tone arm system with precision-ground superhard carbon chromium bearing for vertical plane to improve tracking and musicality. The direct-drive system used here replaces quartz oscillator with a built-in Direct Current servomotor that drives a slightly lighter platter than that of the PL-540. Note that this motor has additional poles (16) and 24 slots working with a super-precision finished shaft and bearing for greater stability with lighter platter. Result is remarkable ±0.04% (DIN) wow and flutter and same 73 dB rumble spec as PL-540. Speed control range is ±2%.*



PL-518

PL-516 FG-Servo Belt-Drive Auto-Return Turntable. *High torque DC servomotor similar to that used in Pioneer's newest open-reel tape decks provides wide load latitude. 18-pulse FG (frequency generator) servo system keeps a close watch on actual motor speed so that it isn't affected by different loads. Easy view strobe helps in fine speed adjustment for ±2% pitch control. Features same static balanced S-shaped tone arm as top-end Pioneer models with an effective arm length of 221 mm for ideal tracking. Tone arm support with 34 ball bearings for horizontal movement and unique carbon-chrome steel verticle bearing ensures great sensitivity and long life. Wow and flutter: ±0.05% (DIN). Rumble (DIN B) : 68 dB or better.*

PL-514 Frequency Synchronized Belt-Drive Auto-Return Turntable. *Motor timed to stable AC frequency rather than AC voltage achieves low wow and flutter ±0.06% (DIN) for this super quiet belt-drive. Precision ground belt helps insulate motor from platter for rumble of 65 dB (DIN B). And the PL-514 has the same tone arm and auto-return, auto-shutoff system with anti-skating and oil-damped cueing device as Pioneer's more expensive semi-automatic turntables. The motor has changed to AC but the results compare with Pioneer's DC models.*

PL-512 Belt-Drive Manual Turntable. *Among the best buys for the dollar of all turntables. The PL-512's simplified single-play design makes for a truly elegant exterior and quality interior to satisfy hi-fi newcomers as well as audio purists who like to place each record down manually and remove tone arm manually at end of play. The 4-pole synchronous motor and high-precision drive system achieve a remarkable ±0.06% (DIN) wow and flutter within first three seconds of operation and for hours thereafter. Tone arm assembly is of same quality as that of PL-540 (same effective arm length and cartridge weight) with anti-skating and oil damped cueing device. And shows same anti-howl concern of Pioneer with solid particle board cabinet that resists all types of acoustic and physical howling. Rumble is a fine 65 dB.*



PL-516



PL-514



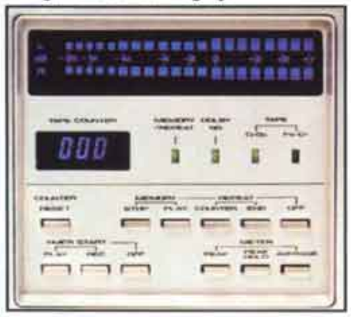
PL-512

In the last several years Pioneer has been the foremost innovator in the design of cassette decks for convenient operation. While the frontloading design which we . . . "Pioneered" has now become generalized for nearly all makes, Pioneer decks are the only ones to include all the details that make for ease of operation and quiet handling. These include: cassette handling without the vibration-prone eject mechanisms of other decks, easy access to tape heads for maintenance, and oil-damped sliding compartment doors.

CREATIVE HI-FI

It's obvious that cassettes offer a valuable alternative to records as a source of prerecorded hi-fi, thanks to their compact format, their relative invulnerability, and the possibility of playing them on portable decks or car stereos. But we believe the greatest advantage of the cassette lies in the creative recording possibilities it offers. That's why Pioneer decks present so many advanced features for improved recording, along with the usual Pioneer quality hi-fi specifications.

This year, you'll find a number of special recording aids. One deck has a third meter for more accurate setting of recording levels, making it possible to attain a maximum of dynamic range without risk of saturating the tape. There are advanced "memory" systems to save time, as well as facilities for connecting timer devices to record while absent. And numerous other features like Dolby monitoring, multiple bias settings and test signal generators–all of which can help you produce home recordings, with high quality tapes, that surpass the quality of many professionally prerecorded tapes. We feel this is a bargain worth taking up!



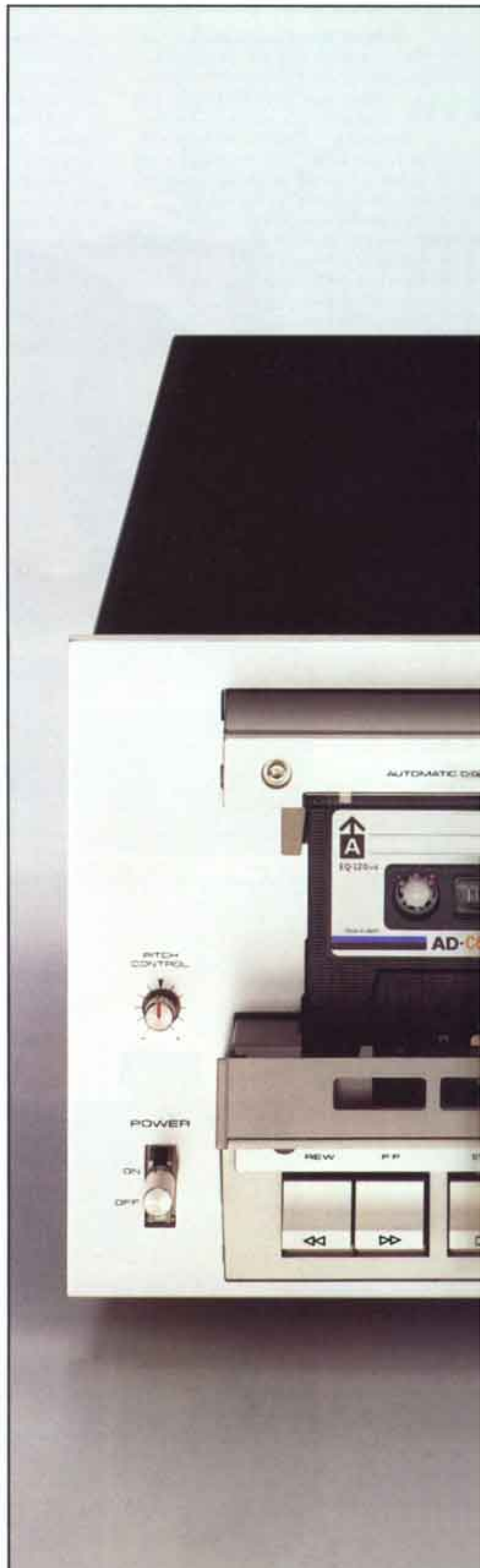
Microprocessor level "meter" and digital tape counter of CT-F 900.

NEW AGE HI-FI

Moreover, with the CT-F 900, Pioneer invites you into the age of microprocessor-programmed audio, with super accurate digital tape counter and more automatic functions. This futuristic model uses a single chip, four bit processor to control the Digitron record and playback level display, thus beginning the same steady process of "de-mechanisation" for tape players as Pioneer undertook for the turntable.

CASSETTE TAPE DECKS

CT-F 1000 2-Motor, 3-Head Stereo Cassette Deck. *The deck with everything, from Pioneer. With automatic CrO_2 tape detector, multiple bias and equalization settings, ±6% (semitone) pitch control, memory stop, memory play, MPX filter, automatic tape slack canceller, built-in oscillator, full auto-stop, solenoid operated direct changeable function buttons, and special design for presetting of recording when using an electric timer. Exceptional playback and recording heads are made from a single ferrite crystal each, instead of usual grains of ferrite. High quality DC servomotor ensures ±0.15% wow and flutter (DIN). Frequency response with CrO_2 tape is 30 to 17,000 Hz (±3 dB).*




MIC/DIN — INPUT — LINE
OUTPUT
MEMORY STOP PLAY
RESET
PAUSE
MONITOR
TDK
PLAY
REC
PIONEER STEREO CASSETTE TAPE DECK
CT-F1000

CT-F 1000

CT-F 900 2-Motor Stereo Cassette Deck with Microprocessor and All-Electronic, 3-Head Transport. *Electronic digital counter permits memory play and repeat and memory stop. Digitron tube display with 20 segments for recording and playback level monitoring replaces traditional level meters. Timer start facility planned for use with optional electronic timer device. Other features include Dolby NR switch, chrome tape sensor with automatic bias and equalization switching, monitoring for tape and source, continuously adjustable bias, and repeat function permitting infinite replay from any point on tape. Outstanding frequency response and low distortion obtained with Sendust Alloy (iron, aluminum and silicon compound) record/play head combination (30 to 17,000 Hz, ±3 dB, with CrO_2 tape). And low wow and flutter (±0.14%, DIN) thanks to electronically-controlled DC servomotor.*



CT-F 900

CT-F 700 Stereo Cassette Deck with "Dynamic" Meter. *Third "dynamic" meter, instead of averaging out peak readings over entire frequency range like conventional meters, provides precise peak readings according to frequency. Result is guarantee of wide dynamic range recording without risk of saturating tape in higher frequencies. Third meter's frequency response is automatically modified when Dolby noise reduction is used and can be adjusted according to tape bias settings. Also functions as indicator of maximum peak level on both channels. Other CT-F 700 features include automatic chrome tape detector, memory stop, mechanism for use with auto-timer, exclusive Pioneer verticle-hold cassette compartment and more. Wow and flutter: ±0.17% (DIN). Frequency response: 30 to 16,000 Hz, ±3 dB (*CrO_2*2). Signal-to-noise ratio: more than 58 dB (DIN).*



CT-F 700

CT-F 4040 Full Auto-Stop Stereo Cassette Deck. *With unique Pioneer verticle cassette holder and oil-damped sliding compartment door. Compartment is illuminated for easy view of cassette at all times and features special marker line to warn of tape-end. Other features include an electronically-controlled DC servomotor and electronic muting for silent mode change, "Hard Permalloy Solid" recording/playback head, ferrite erase head, tape selector switch for standard LH tape, CrO_2 and ferrichrome, and Dolby indicator light. Wow and flutter: ± 0.18% (DIN). Frequency response (with chromium dioxide tape): 40 to 15,000 Hz (± 3 dB). Signal-to-noise ratio: 62 dB (Standard LH, Dolby on).*



CT-F 4040

CT-F 500 Full Auto-Stop Stereo Cassette Deck. *Single DC servomotor design equals drive stability of many two-motor designs thanks to use of two separate belts for independent drive of capstan and take-up reel. Rotation force is transferred directly to a large (80 mm ∅) diecast flywheel for smooth, constant rotation (wow and flutter only ±0.17%, DIN). Autoshutoff after end of tape in all modes ensures long life. Traditional vertical loading door features such Pioneer specials as extra-quiet and smooth pneumatic damping and easy removal for head maintenance. Record/playback head is "Hard Permalloy" and erase head is of ferrite. Frequency response with CrO_2 tape is wide 40 to 15,000 Hz (±3 dB). Signal-to-noise ratio (Dolby on): 64 dB.*



CT-F 500

For those who want to record **professionally,** with multi-tracking and precise editing, or who wish to enjoy hours of continuous entertainment, there's simply nothing like the versatility and long-playing advantages of open reel.

And for those who don't care for the more cumbersome construction of most professional-style open reel systems, Pioneer has created the RT-707–the best of both worlds! Long playing thanks to auto reverse, two-speed for different needs, and rack or shelf mountable for the same good looks and low encumberance as a cassette system.

HAVE IT BOTH WAYS

The unique RT-707 from Pioneer will play your tapes backwards and forwards for endless hours until you press stop. That means 3 hours of original music before you hear the first piece again, and endless replay of any given 3-hour programme. This, of course, with an exceptional signal-to-noise ratio, thanks to the low-speed direct-drive frequency generation AC servomotor and two mirror-polished Hard Permalloy playback heads (one for each direction).

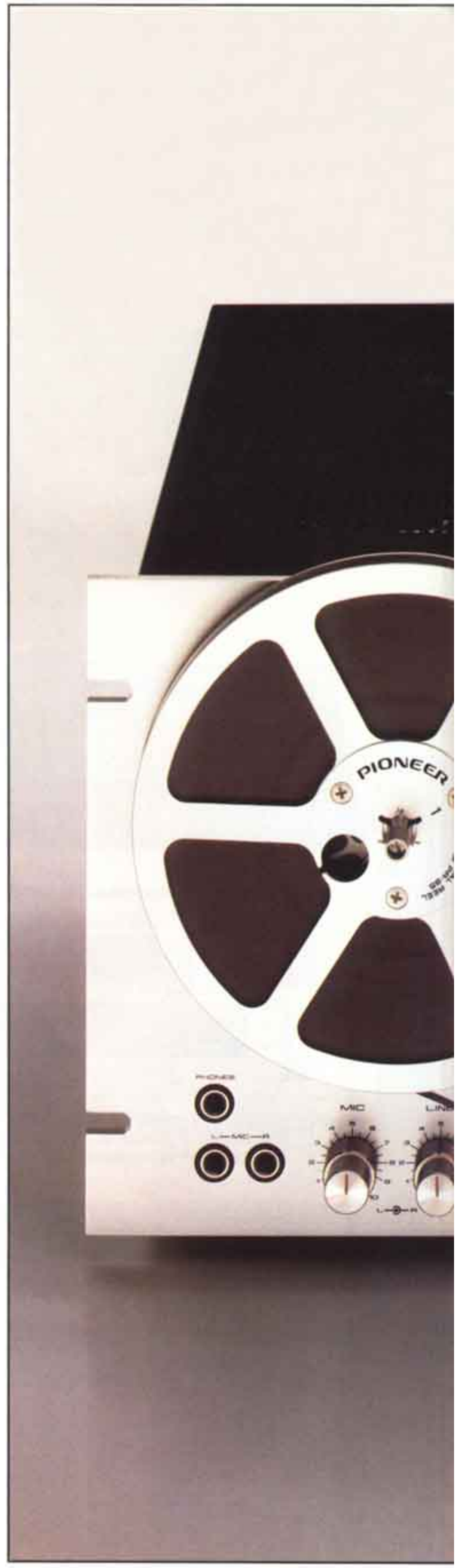


FG servomotor of RT-707.

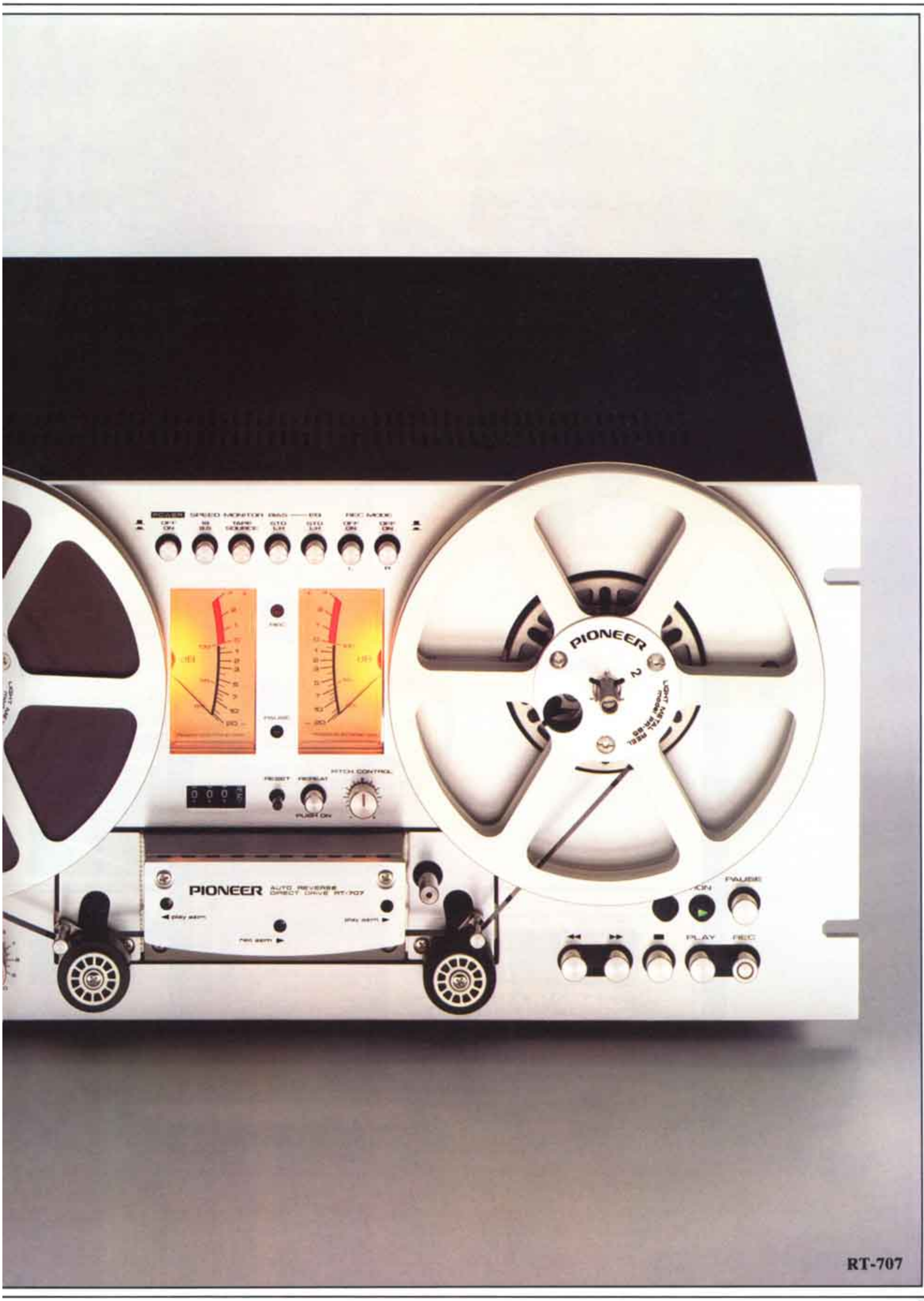


4 heads of RT-707.

OPEN REEL TAPE DECKS



RT-707 Auto Reverse Direct-Drive Stereo Tape Deck. *Three-motor, 4-head system with FG Servomotor for capstan drive and 2 6-pole special induction motors for reel drive. Two playback heads, auto-reverse and repeat, combined with 4-track format, make continuous play possible–at 9.5 or 19 cm/sec. Features 4 bias/equalizer values, ±6% pitch control, electronic switching, line/mic mixing, independent L/R channel recording and pause indicator light. Frequency response: 30 to 24,000 Hz (DIN, at 19 cm/sec). Wow and flutter: ±0.14% (DIN, 19 cm/sec).*


PIONEER
PIONEER
AUTO REVERSE
DIRECT DRIVE RT-707
PITCH CONTROL
PUSH ON
PAUSE
PLAY
REC

RT-707



RT-1011 L Four-Track Belt-Drive Stereo Tape Deck. *Three-motor, 3-head system with built-in mixing amplifier and auto-record facility for use with preset timer. Four-track format offers up to four hours of playing time with professional 26.5 cm reel. That's why construction is extra rugged, with 5 mm thick front chassis panel and diecast framework. Features solenoid-operated direct-changeable function buttons, hyperbolic permalloy heads, 2-speed hysteresis synchronous motor for 19 cm/sec and 9.5 cm/sec capstan drive and two special induction motors for reel drive. Ultra-stable motor is coupled with a large (100 mm ∅) flywheel and precision (0.2 μ error) capstan. Offers two bias and two equalization values and lockable pause for recording and editing. Frequency response: 30 to 24,000 Hz (DIN, 19 cm/sec). Wow and flutter: ±0.15 % (DIN, 19 cm/sec). S/N ratio: 50 dB (DIN).*


PIONEER
PR-100 267mm JAPAN
2
PIONEER
LARGE REEL ADAPTOR PP-220A
PIONEER model RT-1011L
3-MOTOR 3-HEAD STEREO TAPE DECK
REC
REC
REC LEFT RIGHT
OFF ON
REC BIAS EQ
STD LH
MONITOR
TAPE/PLAY SOURCE
PHONES
OUTPUT
LEFT MIC RIGHT
MAX

RT-1011 L

Loudspeakers and headphones make sound the same way musical instruments do–by "pushing at the air". But unlike musical instruments, which often take advantage of the natural resonances they produce to actually enhance tonal quality, loudspeakers must have very carefully controlled natural "resonance modes" in order to accurately reproduce sound. Pioneer has not only found ideal speaker cone materials, but also uses computers to analyse the way all these materials interact with each other and with the cabinet of every speaker.

CARBON FIBRE

The first secret of the Pioneer speaker's faithfulness of reproduction is carbon fibre. Mixed with traditional cone materials in quantities determined by Pioneer's speaker engineers, this fibre yields a woofer cone of great stiffness and high internal damping which is less prone to breakup or "ringing" when excited by the magnet which drives it. Such firm control of vibrations while moving vast amounts of air is what gives Pioneer woofers their characteristically rich, powerful bass performance.



Cut-away view showing quality design of HPM-150

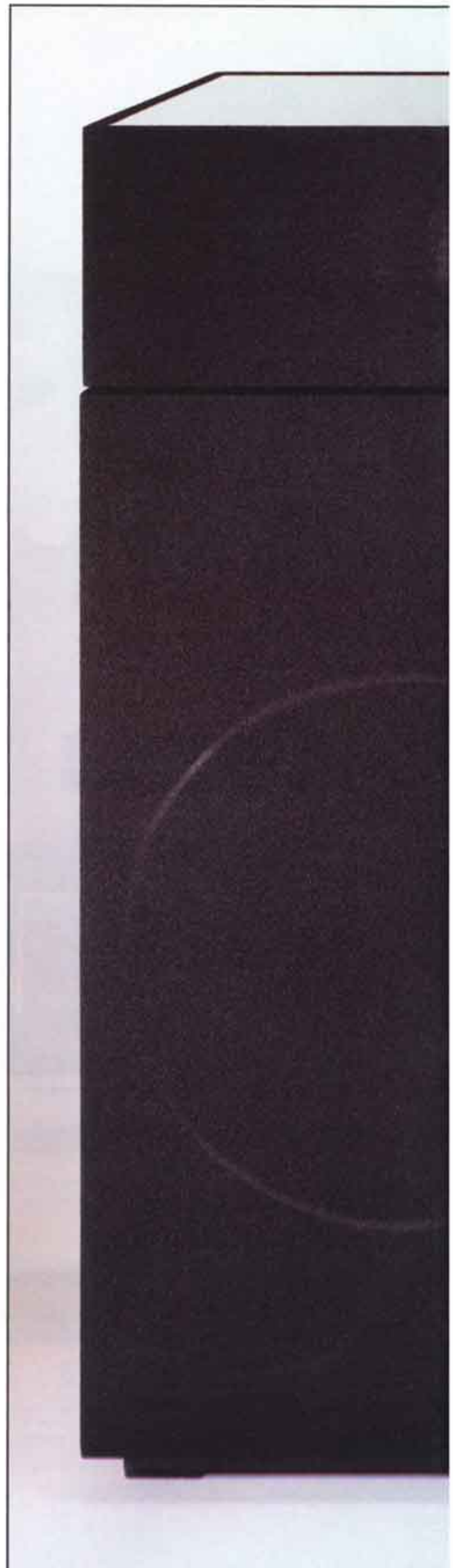
TWEETERS WITH BREATHING MOLECULES

The second secret is the unique material used in Pioneer tweeters: high polymer mylar, or "HPM". This delicate fabric is ideal for the high frequencies which require less movement of air (but much faster movement of the diaphragm) and for headphones, which never have to move very much air. So it is also used in all Pioneer's headphones.

The element which moves to produce the sound is actually a thin molecular film that radiates sound energy uniformly from its entire surface. The actual molecular structure of this film expands and contracts as though it were breathing. A far cry from the traditional piston action of tweeters! And, combined with Pioneer's semicylindrical design in Pioneer's unique supertweeter, another reason for Pioneer's outstanding sound.

LOUDSPEAKERS AND HEADPHONES

HPM-150 *4-way, 4-speaker floor-type Bass Reflex System with tweeter and midrange level controls on front panel. Incorporates a 40 cm carbon fibre blended woofer with long-throw voice coil, a 10 cm midrange with edgewound voice coil, a 4.5 cm lightweight cone tweeter (all three mounted in die-cast aluminum frames to prevent basket resonance), plus a high polymer horn-loaded omnidirectional supertweeter giving 270 degrees of horizontal dispersion. The HPM-150 can handle amplifiers of up to 300 watts per channel! Frequency range: 25 to 25,000 Hz. Sensitivity: 92.5 dB/W at 1 meter. Dimensions (H × W × D): 984.5 × 450 × 450 mm.*





HPM-150

HPM-100 *4-way, 4-speaker Bass Reflex System with mid and high level controls on front baffle. Incorporates a 30 cm carbon fibre blended cone woofer, a 10 cm cone midrange with edgewise wound voice coil, a 4.5 cm cone tweeter (all with die-cast aluminum frames which expel unwanted resonances beyond the frequency range of each driver), and a high polymer molecular film supertweeter providing high power handling capability and 180° dispersion of highs above 12,000 Hz, thanks to semicylindrical design. Smooth overlap of speaker ranges is assured by simplified crossover network with 6 dB/octave slopes. Woofer's performance is enhanced by large (156 mm ∅) magnet and extra long voice coil, plus pure copper ring to minimize the third harmonics in the midrange. Maximum input: 100 watts. Frequency range: 30 to 25,000 Hz. Dimensions (H × W × D): 670 × 390 × 393 mm.*



HPM-100

HPM-60 *4-way, 4-speaker Bass Reflex System with 25 cm carbon fibre cone woofer featuring polyurethane foam edge to suppress edge reflection and resonance. Lightweight 10 cm cone midrange is wet-pressed for extra toughness and subtle response to transients. High frequencies are handled by a convex flange tweeter which directs the sound towards the baffle surface for clean, even dispersion and by a semicylindrical high polymer supertweeter with 180° dispersion. Maximum input: 60 watts. Frequency range: 35 to 25,000 Hz. Dimensions (H× W× D): 610×350×321 mm.*

HPM-40 *3-way, 3-speaker Bass Reflex System with large (25 cm) woofer/midrange cone of carbon fibre blend with polyurethane foam edge and a tweeter, also of carbon fibre blend, designed for long, linear high volume excursions from 4,000 to 10,000 Hz. Semicylindrical HPM supertweeter gives highest frequencies 180° dispersion. Bass is enhanced by a bent-duct pipe, and overall directivity is improved by flush-mount construction. Maximum input: 40 watts. Frequency range: 35 to 25,000 Hz. Dimensions (H× W× D): 570×325×317 mm.*



HPM-60 **HPM-40**

CS-E 731 *3-way, 3-speaker Infinite Baffle System with 30 cm carbon fibre blended cone woofer, 6.5 cm carbon fibre dome midrange, and 2.5 cm dome tweeter. For a dome-type driver, the midrange has a relatively large diaphragm enabling it to cover the frequencies from 650 to 5,000 Hz with ease. Linear response is assured with a double suspension system which avoids amplitude distortion and the harmonic distortion that would follow. Similarly, the tweeter's ultra-thin titanium diaphragm is suspended in foamed polyurethane for better compliance and transient response without edge distortion. And a special diffuser improves high frequency sound dispersion. Two alternators on the crossover network allow independent control of the mid-range and tweeter to match room acoustics. Maximum input is 100 watts. Frequency range: 35 to 20,000 Hz. Dimensions (H× W× D): 660×380×306 mm.*

CS-E 531 *3-way, 3-speaker Infinite Baffle System with 25 cm carbon fibre blended cone woofer, 6.5 cm carbon fibre dome midrange and 2.5 cm dome tweeter with oversized magnet for better precision in high frequencies. Maximum input is 80 watts. Frequency range: 35 to 20,000 Hz. Sensitivity: 90 dB/W at 1 metre. Dimensions (H× W× D): 570×330×306 mm.*



CS-E 731 **CS-E 531**

CS-E 421 *2-way, 2-speaker Infinite Baffle System with 20 cm carbon fibre cone woofer and 2.5 cm dome type paper tweeter equipped with special diffuser for wider dispersion.*
Woofer's oversized ferrite magnet helps cover bass and midrange from 35 to 5,000 Hz with a clean, smooth and natural sound. Crossover network of large ferrite core coils and MF capacitors keeps frequency loss to a minimum, especially at maximum input power. Maximum input is 60 watts. Frequency range: 35 to 20,000 Hz. Dimensions (H × W × D): 500 × 260 × 245 mm.

CS-E 321 *2-way, 2-speaker Infinite Baffle System with 20 cm carbon fibre blended cone woofer and 2.5 cm dome tweeter with a 50-micron thick polyester film diaphragm and special diffuser. The tweeter picks up as low as 4,000 Hz and thus covers the second harmonics of most instruments and follows them all the way into the high highs around 20,000 Hz. The crossover network includes a ferrite core type coil and BP type condensors. Maximum input is 40 watts. Frequency range: 45 to 20,000 Hz. Dimensions (H × W × D): 450 × 240 × 222 mm.*



CS-E 421 **CS-E 321**

CS-424 *3-way, 3-speaker Bass Reflex System with 20 cm carbon fibre blended woofer, 6.6 cm cone type midrange and 4.5 cm cone tweeter. Maximum input: 60 watts. Frequency range: 40 to 20,000 Hz. Sensitivity: 92 dB/W at 1 metre. Dimensions (H× W× D): 540×306×252 mm.*

CS-323 *2-way, 2-speaker Bass Reflex System with 20 cm carbon fibre cone type woofer/midrange and 6.6 cm tweeter (cone type). Maximum input: 30 watts. Frequency range: 50 to 20,000 Hz. Sensitivity: 92 dB/W at 1 metre. Dimensions (H× W× D): 500×270×240 mm.*

CS-X3 *Miniature 2-way, 2-speaker Infinite Baffle System designed for bookshelf or wall mounting (special groove on back to tuck wires away). Though it won't move your body with the powerful bass of Pioneer's other speakers, the CS-X3 will blast out more power than you'd dream thanks to its mighty magnet and double baffle design. It has a 10 cm straight cone woofer to cover the frequency range from 50 to 3,800 Hz and a 2.5 cm dome tweeter suspended in a tough aluminum diecast frame for minimum resonance. Highs are improved thanks to a special damping agent in combination with polyester fibre construction and air suspension enhances the bass. Frequency range: 50 to 20,000 Hz. Maximum input: 50 watts. Dimensions (H× W× D): 188×118×112 mm. "Paperback size".*



CS-424

CS-323



CS-X3

Monitor 10 *Dynamic stereo headphones with 57 mm free-edge polyester film cone drivers. High sensitivity of 100 dB/mW permits connection directly to tuner, tape deck or preamp, and high input capacity (700 mW) allows very loud listening level with receiver or amplifier, without fear of overload. Left and right channel cords independently grounded. Luxuriously finished earcups, headband and plug, and tangle proof 5 metre 4-core curled type cord. Frequency range: 20 to 20,000 Hz. Weight: 530 g without cord.*

SE-505 *2-way Dynamic stereo headphones with volume and tone controls, click-stop head band. Features a 45 mm "woofer" diaphragm of polyester film and a 32 mm polyester "tweeter" with aluminum voice coil. Frequency range: 20 to 20,000 Hz. Sensitivity: 99.4 dB/mW. Maximum input: 500 mW per channel. Weight: 650 g without 5 metre curled cord.*

SE-305 *Dynamic stereo headphones with 4.5 cm polyester film diaphragm. Frequency range: 20 to 20,000 Hz. Sensitivity: 99.1 dB/mW. Maximum input: 500 mW per channel. Weight without 5 metre curled cord: 435 g.*

SE-205 *Dynamic stereo headphones with 70 mm cone-type speaker and headband adjustable via special slide knob. Frequency range: 20 to 20,000 Hz. Sensitivity: 97.4 dB/mW. Maximum input: 500 mW per channel. Weight: 450 g without 2.5 metre straight cable.*



THE PIONEER SYSTEMS

Pioneer has tamed some of its highly prized separate components, carefully selected and matched a number of them together for an optimal sound, and built some expensive cabinetry around them. These systems are not only ideal for the hi-fi listener who would rather sit back and listen than play carpenter. They are also a beautiful object for admiration by the aesthetic hi-fi enthusiast and a source of clean, pure hi-fi for the hard-to-please audiophile.

Each system has a fine integrated amplifier, a tuner, a turntable, a front-loading cassette deck, and a pair of quality bass reflex speakers. The System models share all the Pioneer-perfected technology of the separate components presented in this catalogue, but they have been especially designed (one might say "trained") to work together, harmoniously. They have been organized by their maker, Pioneer. And when you hear them, there's no doubt that somehow, each System is more than the sum of its parts. What's more, you can make your own "sum" by combining each of these Systems with the cabinet of your choice.



X 70

X 90

System X 50
SA-506 Stereo Integrated Amplifier. *25 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz, with no more than 0.08% THD.*
TX-606 AM/FM-Stereo Tuner. *Sensitivity: 1.9 µV. With pilot signal cancellor.*
PL-514 X Belt-Drive Auto-Return Turntable. *Pioneer anti-howl design, static balanced S-shaped tone arm with anti-skating and viscuous damped cueing device. Wow and flutter: ±0.06% (DIN).*
CT-506 Full Auto-Stop Stereo Cassette Deck. *DC servomotor with only ±0.17% wow and flutter (DIN).*
CS-323/W4 2-Way, 2-Speaker Bass Reflex Speaker System. *Max. input: 30 watts.*

System X 70
SA-606 Stereo Integrated Amplifier. *40 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz, with no more than 0.05% THD.*
TX-606 AM/FM-Stereo Tuner. *With pilot signal cancellor. Sensitivity: 1.9 µV.*
PL-516 X Belt-Drive Auto-Return Turntable. *Anti-howl design, S-shaped tone arm, anti-skating and viscuous damped cueing device. Wow and flutter: ±0.05% (DIN).*
CT-606 Full Auto-Stop Stereo Cassette Deck. *With Pioneer sliding-door front loading. Frequency response: 40 Hz to 15 kHz (±3 dB).*
CS-424/W4 3-Way, 3-Speaker Bass Reflex Speaker System. *Max. input: 60 watts.*

System X 90
SA-706 Stereo Integrated Amplifier. *60 watts per channel, min. RMS at 8 ohms, from 20 to 20,000 Hz, with no more than 0.04% THD.*
TX-606 AM/FM-Stereo Tuner. *With pilot signal cancellor. Sensitivity: 1.9 µV.*
PL-518 X Direct-Drive Auto-Return Turntable. *Anti-howl design, S-shaped tone arm, anti-skating and viscuous damped cueing. Wow and flutter: ±0.04% (DIN).*
CT-606 Full Auto-Stop Stereo Cassette Deck. *With Pioneer sliding-door front loading. Frequency response: 40 Hz to 15 kHz (±3 dB).*
CS-525/W4 3-Way, 3-Speaker Bass Reflex Speaker System. *Max. input: 80 watts.*



X 50

Pioneer accessories have been designed and realized with the same attention to quality and reliability as Pioneer's other hi-fi components. We would be foolish to do otherwise. For an "accessory" like a phono cartridge or stylus, if it were of poor quality, could do as much dammage to the overall performance of a hi-fi system as any other poorly designed component. This is also true of a tone arm like the PA-5000, which we recommend for use with the pride of our turntable series–the PL-C 590.

Even an apparently simple item like the speaker cord on the following page has been custom made to perform its sole function (conducting electrical current bearing precious audio signals) flawlessly. In fact the Star Quad system adopted for this speaker cord is the same as that of the wires employed in Pioneer amps and receivers as connecting cable between rectifiers and power-supply capacitors, and between the input transistors and power supplies.

Obviously, Pioneer hi-fi accessories are actually a rather fundamental part of a hi-fi system which can serve to enhance not only the convenience of the system, but also its performance.

PIONEER ACCESSORIES

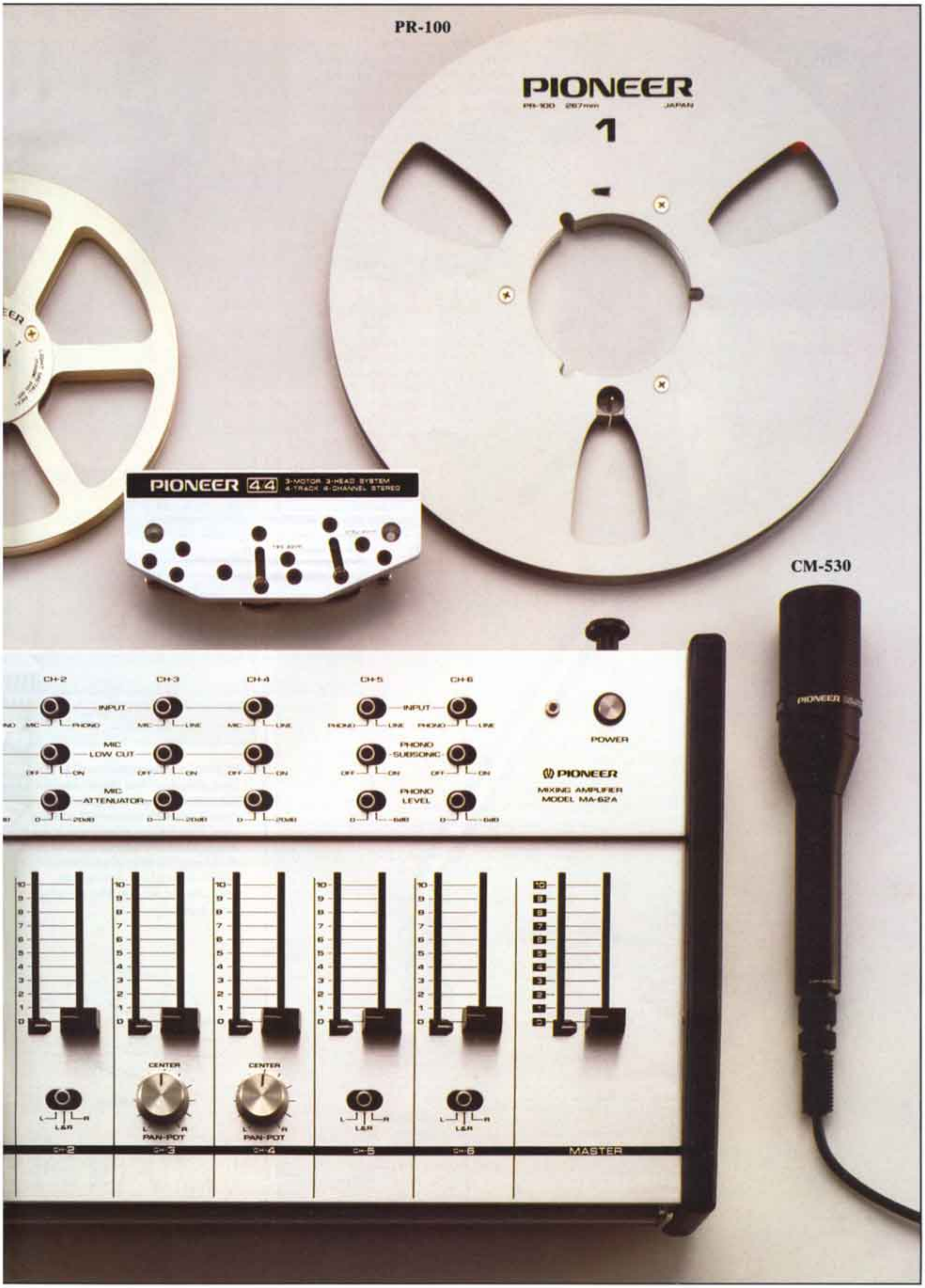
PR-85 *Light weight 17.5 cm metal reel for use with the RT-707 open reel tape deck.*

PR-100 *NAB standard 26.5 cm metal reel for RT-1011 L decks.*

CM-220/S *Electret condensor one-point stereo microphone with hypercardioide directivity characteristics. Frequency response: 40 to 18,000 Hz. S/N ratio: 47 dB. Sensitivity: −65 dB (at 1 kHz). Output impedance: 1 kΩ. Weight: 310 g (including cord).*

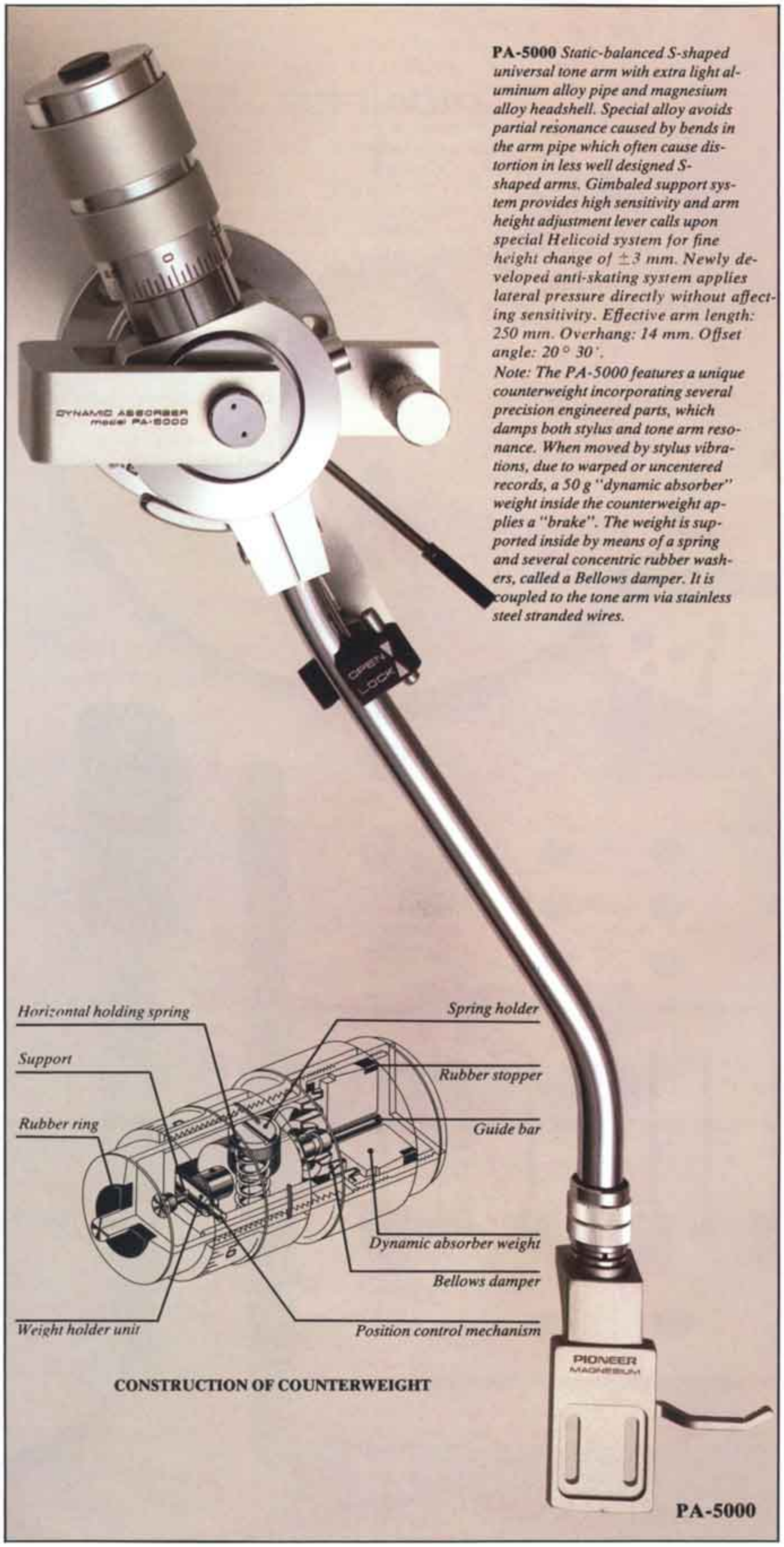
CM-530 *Electret condensor type microphone with omnidirectional/cardioide switchable directivity. S/N ratio: 48 dB. Frequency response: 30 to 20,000 Hz (cardioide), 20 to 19,000 Hz (omni). Output impedance: 600 Ω. Weight: 415 g (with cord).*




PIONEER
1
PIONEER 4-4
3-MOTOR 3-HEAD SYSTEM
4-TRACK 4-CHANNEL STEREO
INPUT
MIC LOW CUT
MIC ATTENUATOR
PHONO SUBSONIC
PHONO LEVEL
POWER
PIONEER
MIXING AMPLIFIER
MODEL MA-62A
CENTER
PAN-POT
MASTER

PR-100

CM-530



PA-5000 *Static-balanced S-shaped universal tone arm with extra light aluminum alloy pipe and magnesium alloy headshell. Special alloy avoids partial resonance caused by bends in the arm pipe which often cause distortion in less well designed S-shaped arms. Gimbaled support system provides high sensitivity and arm height adjustment lever calls upon special Helicoid system for fine height change of ±3 mm. Newly developed anti-skating system applies lateral pressure directly without affecting sensitivity. Effective arm length: 250 mm. Overhang: 14 mm. Offset angle: 20° 30′.*

Note: The PA-5000 features a unique counterweight incorporating several precision engineered parts, which damps both stylus and tone arm resonance. When moved by stylus vibrations, due to warped or uncentered records, a 50 g "dynamic absorber" weight inside the counterweight applies a "brake". The weight is supported inside by means of a spring and several concentric rubber washers, called a Bellows damper. It is coupled to the tone arm via stainless steel stranded wires.

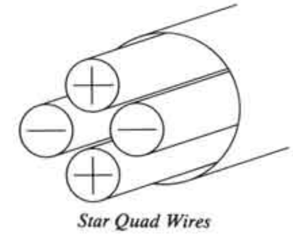
CONSTRUCTION OF COUNTERWEIGHT

PA-5000

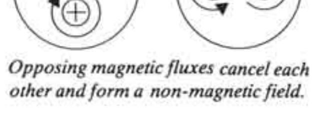


JC-200

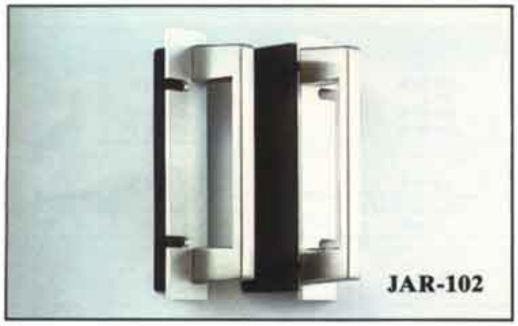
JC-200 *Low impedance speaker cord, adopting "Star Quad" design shown in cross-section below to reduce harmonic and crosstalk distortions. Very low impedance results in excellent phase characteristics, reduced magnetic stray flux, minimum deterioration of low-level signals, and extra-flat reproduction up to the extra high range.*

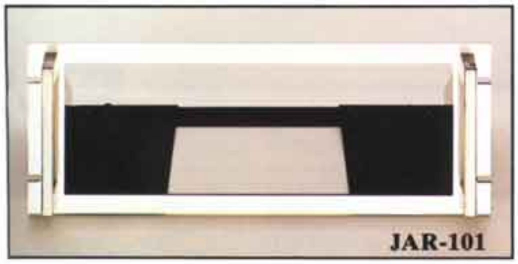


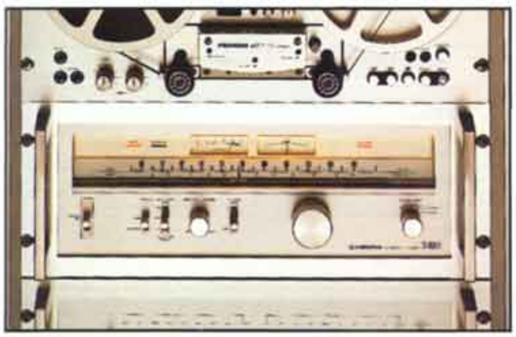
Star Quad Wires



Opposing magnetic fluxes cancel each other and form a non-magnetic field.







TX-9500 II tuner with JAR-101 rack adaptor frame.

JAR-101 *Special aluminum adaptor frame for mounting audio components such as the TX-9500 II stereo tuner and the SG-9500 graphic equalizer, not conforming to EIA standards, in Pioneer's JAR-2 S Rack.*

JAR-102 *Special aluminum handles for mounting the CT-F 1000 cassette deck in Pioneer's JAR-2 S Rack.*



PC-110/II *Moving magnet type phono cartridge.*
- *Frequency response: 15 to 25,000 Hz (±3 dB).*
- *Channel separation: 25 dB (at 1 kHz).*
- *Stylus pressure: 1.7 to 2.5 grams.*
- *Output voltage at 1 kHz (5 cm/sec): 3.5 mV.*
- *Load resistance: 30 to 250 kΩ (47 kΩ, optimum).*
- *Weight: 5.1 grams.*

PC-1000/II *Moving magnet type phono cartridge.*
- *Frequency response: 10 to 80,000 Hz (±3 dB).*
- *Channel separation: 30 dB (at 1 kHz).*
- *Stylus pressure: 0.7 to 1.7 grams.*
- *Output voltage at 1 kHz (5 cm/sec): 2.5 mV.*
- *Load resistance: 30 to 100 kΩ (47 kΩ, optimum).*
- *Weight: 6.4 grams.*

PC-135 *Induced magnet type phono cartridge.*
- *Frequency response: 10 to 25,000 Hz (±3 dB).*
- *Channel separation: more than 25 dB (at 1 kHz).*
- *Stylus pressure: 1.5 to 2.3 grams.*
- *Output voltage at 1 kHz (5 cm/sec): 3 mV.*
- *Load resistance: 50 kΩ.*
- *Weight: 5.4 grams.*

STEREO AMPLIFIERS	SA-9500 II	SA-8500 II	SA-706	SA-606
Continuous power both channels driven at 20 Hz–20 kHz, 8 Ω 20 Hz–20 kHz, 4 Ω 1 kHz, 8 Ω (DIN) 1 kHz, 4 Ω (DIN)	 2×80 W 2×100 W 2×110 W 2×145 W	 2×60 W 2×75 W 2×84 W 2×110 W	 2×60 W – 2×65 W 2×80 W	 2×40 W – 2×45 W 2×50 W
Total Harmonic Distortion at rated output power 20 Hz–20 kHz	<0.05%	<0.05%	<0.04%	<0.05%
Frequency response at AUX input	5 Hz–50 kHz (+0 dB, –1 dB)	5 Hz–50 kHz (+0 dB, –1 dB)	20 Hz–40 kHz (±2 dB)	20 Hz–40 kHz (±2 dB)
S/N (IHF) Mic Phono Tuner, Tape PB, AUX	 – >75 dB >95 dB	 – >75 dB >95 dB	 – 86 dB 95 dB	 – 78 dB 95 dB
Input sensitivity/impedance Phono 1	2.5 mV/10 kΩ, 25 kΩ, 50 kΩ, 100 kΩ	2.5 mV/50 kΩ	2.5 mV/50 kΩ	2.5 mV/50 kΩ
Phono 2	2.5 mV/10 kΩ, 25 kΩ, 50 kΩ, 100 kΩ	2.5 mV/50 kΩ	–	–
Cartridge load	100 pF, 200 pF, 300 pF, 400 pF	100 pF, 200 pF, 300 pF, 400 pF	–	–
Tuner, AUX, Tape Input 1, 2	150 mV/50 kΩ 1 V/50 kΩ	150 mV/50 kΩ 1 V/50 kΩ	150 mV/50 kΩ –	150 mV/50 kΩ –
Bass control Sub (50 Hz)	±6 dB	±10 dB (25 Hz, 50 Hz, 100 Hz)	–	–
Main (100 Hz)	±8 dB	turnover (100 Hz, 200 Hz, 400 Hz)	+12 dB, –10 dB	+12 dB, –10 dB
Treble control Sub (20 kHz)	±6 dB	±10 dB (8 kHz, 16 kHz, 32 kHz)	–	–
Main (10 kHz)	±8 dB	turnover (2 kHz, 4 kHz, 8 kHz)	+10 dB, –10 dB	+10 dB, –10 dB
Low filter	15 Hz (6 dB/oct)	15 Hz (6 dB/oct)	–	–
High filter	8 kHz (6 dB/oct)	8 kHz (6 dB/oct)	–	–
Loudness contour (at –40 dB position)	+6 dB (100 Hz) +3 dB (10 kHz)	+6 dB (100 Hz) +3 dB (10 kHz)	+6 dB (100 Hz) +3 dB (10 kHz)	+6 dB (100 Hz) +3 dB (10 kHz)
Phono overload level Phono 1 Phono 2	 300 mV 300 mV	 250 mV 250 mV	 180 mV –	 180 mV –
Max. power consumption	560 W	490 W	520 W	420 W
Dimensions (W×H×D) mm	420×150×376	420×150×376	420×147×327	420×147×261
Weight (kg)	16	13.9	11.1	7.6

RECEIVERS	SX-1980	SX-1080	SX-980	SX-890
AUDIO SECTION				
Continuous power both channels driven at 20 Hz–20 kHz, 8 Ω 20 Hz–20 kHz, 4 Ω 1 kHz, 8 Ω (DIN) 1 kHz, 4 Ω (DIN)	 2×270 W – 2×270 W –	 2×120 W 2×140 W 2×130 W 2×200 W	 2×80 W 2×95 W 2×90 W 2×120 W	 2×60 W 2×60 W 2×65 W 2×85 W
Total Harmonic Distortion at rated output power 20 Hz–20 kHz	<0.03%	<0.05%	<0.05%	<0.05%
Frequency response at AUX input	5 Hz–80 kHz (+0 dB, –1 dB)	5 Hz–80 kHz (+0 dB, –1 dB)	5 Hz–80 kHz (+0 dB, –1 dB)	5 Hz–80 kHz (+0 dB, –1 dB)
S/N (IHF) Phono Tape PB, AUX	 87 dB 100 dB	 76 dB 90 dB	 76 dB 90 dB	 76 dB 90 dB
FM SECTION (87.5–108 MHz)				
Sensitivity (IHF)	8.75 dBf (1.5 μV)	9.8 dBf (1.7 μV)	9.8 dBf (1.7 μV)	10.3 dBf (1.8 μV)
Sensitivity (DIN) Mono (26 dB S/N) 75 Ω Stereo (46 dB S/N) 75 Ω	 0.6 μV 21 μV	 0.6 μV 22 μV	 0.6 μV 22 μV	 0.7 μV 22 μV
Capture ratio	1.0 dB	1.0 dB	1.0 dB	1.0 dB
Selectivity (±400 kHz)	80 dB	80 dB	80 dB	75 dB
S/N (mono)	83 dB	80 dB	80 dB	80 dB
THD (stereo) 1 kHz	0.1%	0.15%	0.15%	0.15%
Frequency response	30 Hz–15 kHz (+0.2 dB, –0.5 dB)	30 Hz–15 kHz (±0.5 dB)	30 Hz–15 kHz (±0.5 dB)	30 Hz–15 kHz (+0.2 dB, –0.8 dB)
Stereo separation (1 kHz)	50 dB	50 dB	50 dB	45 dB
Subcarrier suppression	65 dB	65 dB	65 dB	55 dB
AM SECTION (525–1,605 kHz)				
Sensitivity (IHF) (ext. ant.)	15 μV	15 μV	15 μV	15 μV
Selectivity	26 dB	26 dB	26 dB	26 dB
LW SECTION (150–350 kHz)				
Sensitivity (int. antenna)	–	–	–	–
Selectivity	–	–	–	–
Max. power consumption	1,400 W	1,100 W	800 W	550 W
Dimensions (W×H×D) mm	560×211×497	526×176×440	526×176×440	480×140×320
Weight (kg)	35.4	21.3	18.8	12.2

SA-506	SG-9500
2×25 W	–
–	–
2×28 W	–
2×30 W	–
0.08 %	<0.04 %
20 Hz–40 kHz (±2 dB)	5 Hz–70 kHz (+0 dB, –1 dB)
–	–
76 dB	–
92 dB	90 dB
2.5 mV/50 kΩ	–
–	–
–	–
150 mV/50 kΩ	–
–	–
–	±10 dB (32 Hz, 64 Hz, 125 Hz, 500 Hz)
+12 dB, –10 dB	
–	±10 dB (1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz)
+10 dB, –10 dB	
–	–
–	–
+6 dB (100 Hz)	–
–	–
140 mV	–
–	–
240 W	16 W
420×147×261	420×150×341
5.9	6.9

SX-790	SX-690	SX-590	SX-450
2×45 W	2×30 W	2×20 W	2×15 W
2×45 W	2×37 W	2×25 W	2×15 W
2×48 W	2×33 W	2×22 W	–
2×60 W	2×38 W	2×26 W	2×25 W
<0.05 %	<0.1 %	<0.3 %	<0.5 %
5 Hz–80 kHz (+0 dB, –1 dB)	10 Hz–60 kHz (+0.5 dB, –1.5 dB)	10 Hz–60 kHz (+0.5 dB, –1.5 dB)	20 Hz–60 kHz (±1 dB)
76 dB	75 dB	73 dB	70 dB
90 dB	90 dB	90 dB	90 dB
10.3 dBf (1.8 µV)	10.8 dBf (1.9 µV)	10.8 dBf (1.9 µV)	11.2 dBf (2.0 µV)
0.7 µV	0.7 µV	0.7 µV	0.9 µV
22 µV	22 µV	22 µV	25 µV
1.0 dB	1.0 dB	1.0 dB	1.0 dB
75 dB	60 dB	60 dB	60 dB
80 dB	80 dB	80 dB	70 dB
0.15 %	0.15 %	0.15 %	0.3 %
30 Hz–15 kHz (+0.2 dB, –0.8 dB)	30 Hz–15 kHz (+0.2 dB, –1 dB)	30 Hz–15 kHz (+0.2 dB, –1 dB)	30 Hz–15 kHz (+0.2 dB, –2 dB)
45 dB	40 dB	40 dB	40 dB
55 dB	50 dB	50 dB	40 dB
15 µV	15 µV	15 µV	15 µV
26 dB	26 dB	26 dB	35 dB
–	–	–	–
–	–	–	–
420 W	280 W	210 W	130 W
480×140×320	435×144.5×314	435×144.5×314	448×141×307
11.2	8.9	8.3	8.6

STEREO AMPLIFIERS	SPEC-3	SPEC-4
Continuous power both channels driven		
20 Hz–20 kHz, 8 Ω	–	2×150 W
20 Hz–20 kHz, 4 Ω	–	2×180 W
1 kHz, 8 Ω (DIN)	–	2×170 W
1 kHz, 4 Ω (DIN)	–	2×185 W
Total Harmonic Distortion at rated output power		
20 Hz–20 kHz	–	<0.01 %
Phono (20 Hz–20 kHz)	<0.01 %	–
AUX (20 Hz–20 kHz)	<0.005 %	–
Frequency response	–	5 Hz–100 kHz (+0 dB, −1 dB)
at phono	20 Hz–20 kHz (±0.2 dB)	–
at AUX	10 Hz–100 kHz (+0 dB, −0.5 dB)	–
Signal-to-noise ratio (IHF)	–	115 dB
Phono	80 dB	–
AUX	100 dB	–
Input sensitivity/impedance		
Phono 1	2.5 mV/100 Ω 10 kΩ, 50 kΩ, 100 kΩ	–
Phono 2	2.5 mV/100 Ω 10 kΩ, 50 kΩ, 100 kΩ	–
Cartridge load	100 pF, 200 pF, 300 pF, 400 pF	–
Tuner, AUX, Tape	150 mV/50 kΩ	–
Input 1, 2	–	1 V/50 kΩ
Bass control		
Sub (50 Hz)	±10 dB (25 Hz, 50 Hz, 100 Hz)	–
Main (100 Hz)	turnover frequency 100 Hz, 200 Hz, 400 Hz	–
Treble control		
Sub (20 kHz)	±10 dB (8 kHz, 16 kHz, 32 kHz)	–
Main (10 kHz)	turnover frequency 2 kHz, 4 kHz, 8 kHz	–
Low filter	15 Hz (6 dB/oct)	–
High filter	–	–
Phono overload level		
Phono 1	300 mV	–
Phono 2	300 mV	–
Maximum power consumption	15 W	760 W
Dimensions (W×H×D) mm	480×142×390	480×187×445
Weight (kg)	7.7	24.5

TURNTABLES	PL-C590	PL-630	PL-560	PL-540	PL-518/518X	PL-516/516X
Motor	quartz PLL Hall motor	quartz PLL Hall motor	quartz PLL Hall motor	quartz PLL Hall motor	DC servo	FG servo DC motor
Drive System	direct drive	direct drive	direct drive	direct drive	direct drive	belt drive
Speeds	33¹/₃, 45 rpm	33¹/₃, 45 rpm	33¹/₃, 45 rpm	33¹/₃, 45 rpm	33¹/₃, 45 rpm	33¹/₃, 45 rpm
Turntable platter	Ø 32 cm alloy die-cast	Ø 33 cm alloy die-cast	Ø 32 cm alloy die-cast	Ø 32 cm alloy die-cast	Ø 32 cm alloy die-cast	Ø 32 cm alloy die-cast
Rumble DIN B, weighted	75 dB	75 dB	>73 dB	>73 dB	>73 dB	>68 dB
Wow and flutter (DIN)	±0.035 %	±0.035 %	±0.035 %	±0.035 %	±0.04 %	±0.05 %
Usable cartridge weight (g)	–	4–12.5	4–10	4–10	4–10	4–10
Effective arm length (mm)	–	237	221	221	221	221
Dimensions (W×H×D) mm	490×185×406	470×148×418	440×145×365	440×145×365	440×145×365	440×140×365
Weight (kg)	14	12	10.5	10	9.5	7.5

STEREO HEADPHONES	MONITOR 10	SE-505	SE-305	SE-205
Matching impedance	4–16 Ω	4–16 Ω	4–16 Ω	4–16 Ω
Frequency response	20 Hz–20 kHz	20 Hz–20 kHz	20 Hz–20 kHz	20 Hz–20 kHz
Maximum input per channel	700 mW	500 mW	500 mW	500 mW
Characteristic sound pressure level (DIN)	100 dB/mW	99.4 dB/mW	99.1 dB/mW	97.4 dB/mW
Speaker	5.7 cm dynamic	2-way dynamic 4.5 cm + 3.2 cm	4.5 cm dynamic	7 cm dynamic
Net weight (g)	530	690	435	450
Connecting cable	5 m curled type with 3-P plug	5 m curled type with 3-P plug	5 m curled type with 3-P plug	2.5 m cable with 3-P plug

PL-514/514X	PL-512
4-pole synchronous	4-pole synchronous
belt drive	belt drive
33¹/₃, 45 rpm	33¹/₃, 45 rpm
Ø 32 cm alloy die-cast	Ø 30 cm alloy die-cast
>65 dB	>65 dB
±0.06 %	±0.06 %
4–10	4–10
221	221
440×140×365	440×132×365
7.5	6.5

LONG WAVE RECEIVERS	LX-690
AUDIO SECTION	
Continuous power both channels driven at 20 Hz–20 kHz, 8 Ω 20 Hz–20 kHz, 4 Ω 1 kHz, 8 Ω (DIN) 1 kHz, 4 Ω (DIN)	 2×30 W 2×37 W 2×33 W 2×38 W
Total Harmonic Distortion at rated output power 20 Hz–20 kHz	 <0.1 %
Frequency response at AUX input	10 Hz–60 kHz (+0.5 dB, −1.5 dB)
S/N (IHF) Phono Tuner, Tape PB, AUX	 75 dB 90 dB
FM SECTION (87.5–108 MHz)	
Sensitivity (IHF) Sensitivity (DIN) Mono (26 dB S/N) 75 Ω Stereo (46 dB S/N) 75 Ω	10.8 dBf (1.9 μV) 0.7 μV 22 μV
Capture ratio	1.0 dB
Selectivity (±400 kHz)	60 dB
S/N (mono)	80 dB
THD (stereo) 1 kHz	0.15 %
Frequency response	30 Hz–15 kHz (+0.2 dB, −1 dB)
Stereo separation (1 kHz)	40 dB
Subcarrier suppression	50 dB
MW SECTION (525–1,605 kHz)	
Sensitivity (IHF) (ext. ant.)	12 μV
Selectivity	30 dB
LW SECTION (150–350 kHz)	
Sensitivity (int. antenna)	320 μV/m
Selectivity	35 dB
Max. power consumption	280 W
Dimensions (W×H×D) mm	435×144.5×314
Weight (kg)	9.1

LOUDSPEAKER SYSTEMS	HPM-150	HPM-100	HPM-60	HPM-40	CS-525/W4
Enclosure type	bass reflex 4-sp., 4-way	bass reflex 4-sp., 4-way	bass reflex 4-sp., 4-way	bass reflex 3-sp., 3-way	bass reflex 3-sp., 3-way
Speakers woofer	1×40 cm cone	1×30 cm cone	1×25 cm cone	1×25 cm cone	1×25 cm cone
midrange	1×10 cm cone	1×10 cm cone	1×10 cm cone	–	1×6.6 cm cone
tweeter	1×4.5 cm cone	1×4.5 cm cone	1×4.5 cm cone	1×4.5 cm cone	1×4.5 cm cone
supertweeter	high polymer	high polymer	high polymer	high polymer	–
Crossover frequency	750/2,600/8,500 Hz	1,200/4,000/12,000 Hz	1,200/4,000/12,000 Hz	4,000/10,000 Hz	1,500/3,000 Hz
Frequency range	25 Hz–25 kHz	30 Hz–25 kHz	35 Hz–25 kHz	35 Hz–25 kHz	35 Hz–20 kHz
Sensitivity (at 1 m)	92.5 dB/W	92.5 dB/W	92.5 dB/W	91 dB/W	91 dB/W
Operating power to get 96 dB SPL at 1 m distance (DIN)	2.1 W	2.1 W	2.1 W	3.2 W	3.2 W
Maximum input power	250 W	100 W	60 W	40 W	80 W
Nominal input power	125 W	50 W	30 W	20 W	40 W
Nominal impedance	6.3 Ω	8 Ω	8 Ω	8 Ω	8 Ω
Dimensions (W×H×D) mm	450×984.5×450	390×670×393	350×610×321	325×570×317	345×585×305
Weight (kg)	37.3	26.7	17.5	13	11.3

CASSETTE TAPE DECKS	CT-F 1000	CT-F 900	CT-F 700	CT-606
REC/PB Head	1×Comb. Ferrite solid	1×Comb. Sendust alloy solid	1×Ferrite solid	1×Permalloy solid
Erasing Head	1×Ferrite	1×Ferrite	1×Ferrite	1×Ferrite
Frequency response (REC/PB)				
Standard/LH tape	30 Hz–15 kHz, ±3 dB	30 Hz–15 kHz, ±3 dB	30 Hz–14 kHz, ±3 dB	40 Hz–13 kHz, ±3 dB
Chromium Dioxide tape	30 Hz–17 kHz, ±3 dB	30 Hz–17 kHz, ±3 dB	30 Hz–16 kHz, ±3 dB	40 Hz–15 kHz, ±3 dB
Ferrichromium Dioxide tape	30 Hz–17 kHz, ±3 dB	30 Hz–17 kHz, ±3 dB	30 Hz–16 kHz, ±3 dB	40 Hz–15 kHz, ±3 dB
Signal-to-noise ratio				
Dolby off	>54 dB	>54 dB	>54 dB	54 dB
Dolby on	>64 dB	>64 dB	>64 dB	64 dB
Wow and flutter				
DIN (weighted)	±0.15 %	±0.14 %	±0.17 %	±0.18 %
WRMS	<0.05 %	<0.05 %	<0.05 %	<0.06 %
Inputs (sensitivity/max. input/impedance)				
Mic	0.22 mV/100 mV/30 kΩ	0.3 mV/100 mV/30 kΩ	0.3 mV/100 mV/10 kΩ	0.2 mV/45 mV/10 kΩ
Line	60 mV/25 V/100 kΩ	60 mV/25 V/100 kΩ	64 mV/25 V/100 kΩ	50 mV/25 V/100 kΩ
DIN Jack	10 mV/5 V/2.2 kΩ	–	14 mV/4.5 V/1.8 kΩ	9 mV/2 V/2.2 kΩ
Outputs (max. level/impedance)				
Line	680 mV/50 kΩ	640 mV/50 kΩ	630 mV/50 kΩ	700 mV/50 kΩ
DIN Jack	680 mV/50 kΩ	–	710 mV/50 kΩ	700 mV/50 kΩ
Headphones	93 mV/8 Ω	90 mV/8 Ω	100 mV/8 Ω	100 mV/8 Ω
Drive System	2 motor	2 motor	1 motor	1 motor
	1 DC servo for capstan	1 DC servo for capstan	DC electronically	DC electronically
	1 DC high torque for FF/REW	1 DC high torque for FF/REW	–	–
Dimensions (W×H×D) mm	420×187×362	420×187×362	420×187×304	420×151×323.5
Weight (kg)	12	11	8.5	7.5

STEREO TUNERS	TX-9500 II	TX-8500 II	TX-606
AUDIO SECTION			
Output level/impedance			
FM (100 % MOD) Fixed	650 mV/4.2 kΩ	650 mV/4.2 kΩ	650 mV/3.3 kΩ
Variable	50 mV–1.3 V/3.6 kΩ	50 mV–1.3 V/3.6 kΩ	–
AM (30 % MOD) Fixed	200 mV/4.2 kΩ	200 mV/4.2 kΩ	200 mV/5.4 kΩ
Variable	15 mV–400 mV/3.6 kΩ	15 mV–400 mV/3.6 kΩ	–
FM SECTION (87.5–108 MHz)			
Sensitivity			
(DIN) mono: 26 dB S/N (75 Ω)	0.6 μV	0.7 μV	1.0 μV
(DIN) stereo: 46 dB S/N (75 Ω)	21 μV	22 μV	25 μV
(IHF) mono	8.8 dBf (1.5 μV)	10.3 dBf (1.8 μV)	10.7 dBf (1.9 μV)
Signal-to-noise ratio (IHF) (stereo) (at 65 dBf)	77 dB	75 dB	74 dB
Signal-to-noise ratio (DIN) unweighted (stereo)	74 dB	68 dB	65 dB
Total Harmonic Distortion (1 kHz) stereo	0.07 % (Wide) 0.25 % (Narrow)	0.1 % (Wide) 0.4 % (Narrow)	0.25 % –
Capture ratio	0.8 dB (Wide) 2.0 dB (Narrow)	0.8 dB (Wide) 2.0 dB (Narrow)	1.0 dB –
Selectivity (±400 kHz)	35 dB (Wide) 85 dB (Narrow)	35 dB (Wide) 80 dB (Narrow)	– 60 dB
Frequency response (stereo) (+0.2 dB, −1 dB)	20 Hz–15 kHz	20 Hz–15 kHz	20 Hz–15 kHz
Stereo separation (1 kHz)	50 dB (Wide) 45 dB (Narrow)	45 dB (Wide) 45 dB (Narrow)	– 40 dB
Image response ratio	120 dB	85 dB	60 dB
Subcarrier product ratio	77 dB	72 dB	53 dB
AM SECTION (525–1,605 kHz)			
Sensitivity (IHF) (ext. antenna)	15 μV	15 μV	15 μV
Signal-to-noise ratio	55 dB	50 dB	50 dB
Image response ratio	70 dB	45 dB	40 dB
Selectivity	30 dB	30 dB	30 dB
Dimensions (W×H×D) mm	420×150×395	420×150×395	420×147×264
Weight (kg)	9.5	8.1	4.6

CS-424/424/W4	CS-323/323/W4	CS-X3	CS-E731	CS-E531	CS-E421	CS-E321
bass reflex 3-sp., 3-way	bass reflex 2-sp., 2-way	air suspension bookshelf 2-sp., 2-way	infinite baffle 3-sp., 3-way	infinite baffle 3-sp., 3-way	infinite baffle 2-sp., 2-way	infinite baffle 2-sp., 2-way
1×20 cm cone 1×6.6 cm cone 1×4.5 cm cone –	1×20 cm cone – 1×6.6 cm cone –	1×10 cm cone – 1×2.5 cm dome –	1×30 cm cone 1×6.5 cm dome 1×2.5 cm dome –	1×25 cm cone 1×6.5 cm dome 1×2.5 cm dome –	1×20 cm cone – 1×2.5 cm dome –	1×20 cm cone – 1×2.5 cm dome –
1,300/4,000 Hz	2,000 Hz	3,800 Hz	650/5,000 Hz	900/5,500 Hz	5,000 Hz	4,000 Hz
40 Hz–20 kHz	50 Hz–20 kHz	50 Hz–20 kHz	35 Hz–20 kHz	35 Hz–20 kHz	35 Hz–20 kHz	45 Hz–20 kHz
92 dB/W	92 dB/W	80.5 dB/W	89 dB/W	90 dB/W	90 dB/W	88 dB/W
2.5 W	2.5 W	33.6 W	5 W	4 W	4 W	6.5 W
60 W	30 W	50 W	100 W	80 W	60 W	40 W
30 W	15 W	25 W	50 W	40 W	30 W	20 W
8 Ω	8 Ω	6.3 Ω	8 Ω	8 Ω	8 Ω	4 Ω
306×540×252	270×500×240	118×188×112	380×660×306	330×570×306	260×500×245	240×450×222
8	5.8	3.6	19	13.5	8.5	6

CT-F 500/CT-506	CT-F 4040
1×Hard Permalloy	1×Permalloy solid
1×Ferrite	1×Ferrite
40 Hz–13 kHz, ±3 dB 40 Hz–15 kHz, ±3 dB 40 Hz–15 kHz, ±3 dB	40 Hz–13 kHz, ±3 dB 40 Hz–15 kHz, ±3 dB 40 Hz–15 kHz, ±3 dB
>54 dB >64 dB	>52 dB >62 dB
±0.17% <0.05%	±0.18% <0.08%
0.3 mV/110 mV/10 kΩ 65 mV/14 V/100 kΩ 9 mV/2 V/2.2 kΩ	0.2 mV/45 mV/10 kΩ 50 mV/25 V/100 kΩ 9 mV/2 V/2.2 kΩ
700 mV/50 kΩ 700 mV/50 kΩ 100 mV/8 Ω	450 mV/50 kΩ 450 mV/50 kΩ 60 mV/8 Ω
1 motor DC servo –	1 motor DC electronically –
380×140×261	380×150×316
5	7.2

REEL-TO-REEL TAPE DECKS	RT-707	RT-1011L
Drive system	3-motor Solenoid operation	3-motor Solenoid operation
Tape heads	4 track/2 ch. PB×1 4 track/2 ch. REV PB×1 4 track/2 ch. REC×1 4 track/2 ch. Erase×1	4 track/2 ch. PB×1 – 4 track/2 ch. REC×1 4 track/2 ch. Erase×1
Tape speeds	19 cm/sec. 9.5 cm/sec.	19 cm/sec. 9.5 cm/sec.
Wow and flutter 19 cm/sec. (DIN) 9.5 cm/sec. (DIN)	 ±0.14% ±0.18%	 ±0.15% ±0.19%
Frequency response at 19 cm/sec. (DIN) 9.5 cm/sec. (DIN)	 30 Hz–24 kHz 30 Hz–16 kHz	 30 Hz–24 kHz 30 Hz–16 kHz
Signal-to-noise ratio (DIN) (unweighted)	58 dB 52 dB	58 dB 50 dB
Total Harmonic Distortion	<1%	<1%
Inputs (sensitivity/max. input/impedance) Mic Line DIN Jack	 0.25 mV/125 mV/27 kΩ 50 mV/25 V/100 kΩ 16 mV/8 V/1.3 kΩ	 0.25 mV/80 mV/20 kΩ 50 mV/25 V/100 kΩ 15 mV/1.5 V/1.5 kΩ
Outputs (max. level/impedance) DIN Jack Line Headphones	 700 mV/50 kΩ 700 mV/50 kΩ 70 mV/8 Ω	 316 mV/50 kΩ 316 mV/50 kΩ 40 mV/8 Ω
Dimensions (W×H×D) mm	480×230×356	428×431×227
Weight (kg)	20	18.6

Specifications and design are liable to modification without prior notice.

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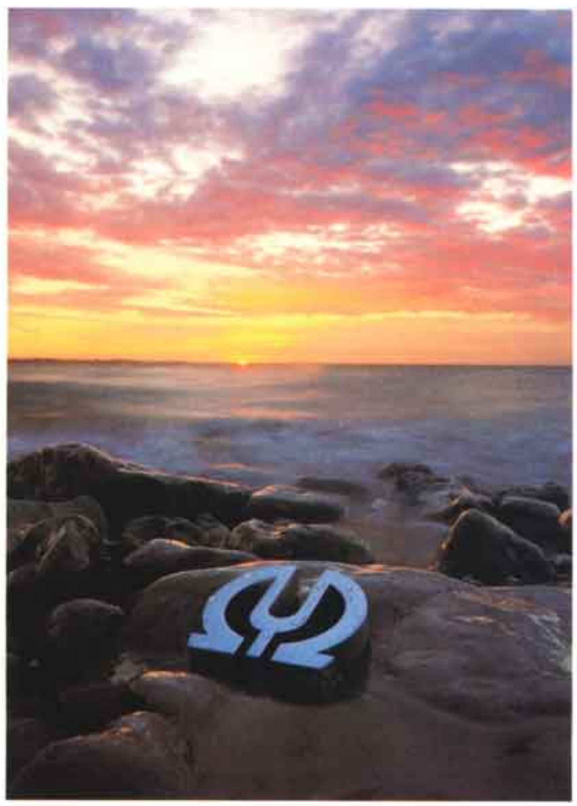
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